THE ARCHAEOLOGY OF SOUTHERN ONTARIO TO A.D. 1650

edited by
Chris J. Ellis & Neal Ferris

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Cover Illustration: Stone effigy from a pipe reworked into a pendant. Excavated from the Historic Neutral Misner Site, near Hamilton (see Figure 13.12b, Chapter 13).

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This volume is dedicated to the memory of:

George J. Connoy
1921-1990

London Chapter Founding Member and Treasurer, 1977-1990

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CHAPTER 1

INTRODUCTION

Chris J. Ellis

The written records of the earliest European visitors to southern Ontario provide some details on the nature of the Native groups occupying the area during the early 17th century. For example, they record that many of these groups lived year-round in relatively permanent, fortified villages composed of "longhouses" and subsisted on the planting of crops such as corn, beans and squash, supplemented by fishing, hunting and the collection of wild plant foods. Also, these records provide some insights into the religious concepts, social organization and material culture of these groups. To a large extent, the picture presented in these records has served as a stereotype of the culture and lifestyles of southern Ontario's Native peoples in the minds of the general public. Yet, these written commentaries cover only a very short period in the long history of human occupation of the area. Further, even during the 17th century, the written records are fragmentary and incomplete and do not provide information on many of the intimate details of the nature and lifestyles of the Native groups of that time. This shortcoming is partially a product of the fact that some written records have not survived but also, to some extent, reflects the fact that many early European observers were uninterested in the details of Native life or alternatively, because of their cultural backgrounds, found these details "foreign" to their own experience and difficult to comprehend.

Archaeological research in southern Ontario has begun to rectify these deficiencies. It has not only started to fill in details of Native life in the 17th century but has demonstrated as well that the ancestors of historically known Native groups do not fit the pattern of settled village-agriculturalists recorded in historic times. Rather, as with all human groups, the Native peoples of the area have a long and rich history of 11,000 years or more throughout which they changed and evolved in order to cope with changing environmental circumstances and the other realities of human life. Indeed, the farther back in time one goes in the archaeological record, the more different the prehistoric inhabitants of the region are from their historically-known descendents.

This volume presents a synthesis of this long and varied development and the details of Native life in southern Ontario revealed primarily by archaeological research. For purposes of the volume, "southern Ontario" encompasses that area south of Ottawa on the east and the Bruce Peninsula on the west. Yet, we have left the boundary somewhat flexible in order to accommodate prehistoric developments which do not readily fit into such neat arbitrary boundaries. For some time there has been a need for a synthetic volume on southern Ontario prehistory which would serve as a reference work on the subject for both the informed members of the public and the student. The archaeology of the region has been touched upon in more general synthetic works of wider scope (e.g. Fitting 1970; Quimby 1960; Mason 1981; W. Ritchie 1969; J. V. Wright 1972a) but no syntheses specifically focused on this area are available. Further, even the more general works are now much out of date, and do not reflect the latest developments in the field. Finally, the tempo of industrial, recreational and other developments in Ontario is such that a large amount of field research has been carried out in recent years under the auspices of salvage archaeology or "Cultural Resource Management" (CRM) programmes. In other words, archaeologists have been forced to excavate many sites in order to obtain or salvage information before those sites are destroyed by modern development. Unlike much pure scientific research, the results of this salvage work often remain confined to sources such as government reports where they are not easily accessible to the student. This result is unfortunate as much of this CRM work has been extremely important. Often CRM has forced many archaeologists to work on sites, such as small

scatters of stone tools and debris from their manufacture, which at first glance do not appear very promising venues to find out about Ontario's past. However, work at such sites has begun to provide a fuller and less biased account of past cultural systems by forcing attention away from solely the more "spectacular" sites, or from the large villages which are restricted solely to the last thousand years or so of prehistory. Thus, it was felt that the present volume would provide a venue in which some of the impressive results of that research could be provided.

In the following, first, a review of the environment and geological history of southern Ontario is presented in order to provide a background and context for documenting and understanding its human occupancy. This background is followed by several chapters which detail the archaeology of the area in largely chronological order from the earliest occupants of ca. 11,000 years ago to the early historic era. A concluding chapter summarizes the nature of European-Native interaction in the ca. A.D. 1550 to 1650 period.

The presentation follows the standard division of much of northeastern North American prehistory by organizing developments into three subdivisions: Paleo-Indian, Archaic and Woodland. While the former two divisions are covered in single chapters, the more recent Woodland subdivision is covered by several contributions. This imbalance is partially a product of the more recent nature of the Woodland era which is conducive to better site preservation. Yet, it also reflects profound differences in the population densities and nature of the societies which existed in the Woodland as compared to earlier times, biases in previous research foci, and in historic times, the availability of written records to compliment the archaeological research. Each chapter has been written by a separate author or series of authors who are currently involved in active lab or field research on sites representing their chapter contributions. This format has two advantages. First, it ensures that each chapter is up to date and reflects the latest thinking on the subject. Second, and as noted by Noble (1982:182), the current pace of archaeological research in Ontario is such that it has become almost impossible for a single individual to be intimate with and summarize all of the data available on its prehistory.

Each chapter in the volume is not intended to be as detailed as possible a description and interpretation of the archaeological record. Such a work would fill several volumes. Instead, each chapter is meant to serve as an introduction to each topic. If, however, the reader wishes to explore any of these topics in more detail, the contributors have provided as complete a list of references as possible which can be consulted for additional information. Also, the reader should not assume that all of the interpretations presented in the volume are "written in stone." Many details of the archaeological record are subject to variant interpretations due to gaps in our knowledge as well as contrasts in the theoretical outlooks or interpretative frameworks of different archaeologists. In editing this volume, I have tried to get contributors to note, wherever possible, interpretations over which there is disagreement and to substantiate why the contributor(s) follow certain interpretations as opposed to other possibilities -- subject to spatial limitations. Again, the interested reader is urged to consult the cited references in order to get a wider understanding of certain points of contention.

A Note on Radiocarbon Dating

Most age estimates used in this volume are based on the radiocarbon or Carbon-14 (hereafter C-14) dating technique (see Libby 1955; Michels 1973; Tite 1972). This technique is based on the measurement of the amount of the radioactive, unstable Carbon-14 isotope remaining in the remains of once living matter recovered from archaeological and geological contexts. This isotope is presumed to be present in the atmosphere in constant amounts and is incorporated into plants through photosynthesis and animals by eating plants or other animals.

When the living matter dies, no more Carbon-14 is taken in and that in the organic remains begins to be lost or decays to Nitrogen-14. This decay occurs at a constant rate over time. Hence, by measuring the amount of C-14 remaining in a sample, an age estimate of the time elapsed since the death of the organism can be provided.

All radiocarbon dates are reported as B.P. years or "Before Present" -- present being A.D. 1950 when the technique was introduced. Because of a number of factors involved in counting the amount of C-14 remaining in a

sample, the age given is a statistical or probability estimate and is accompanied by a "plus-minus" figure representing one sigma or standard deviation. For example, a date received from a lab of 2000 ± 100 B.P. does not mean the age is exactly 2000 B.P. Instead, it means there is a 68% chance that the dated material is within 100 years of 2000 B.P. or 1900 to 2100 B.P. If the quoted error estimate is doubled to two standard deviations or 200 years in our example (1800 to 2200 B.P.), the probability of the date falling in that range is 95% -- very good odds. Except where noted in the text, all dates reported in this volume will be cited as they are received from the lab (e.g. with one sigma error estimates).

There has been a tendency to convert C-14 dates to the B.C. or A.D. system of the Christian calendar by subtracting the reported dates from 1950. For example, this would convert our hypothetical date of 2000 ± 100 B.P. to 50 ± 100 B.C. This practice is followed in some sections of this volume although technically, Carbon-14 years are not exactly equivalent to "real" years. First, since the technique was introduced and began to be applied, it has been learned that the constant rate of decay used for the initial readings is slightly inaccurate. However, in order to avoid recalculating all dates reported prior to this updating, the original rate of decay used in calculations has been retained in reporting dates. Second, it has been shown that the amount of Carbon-14 in the atmosphere has not been constant over time which the technique assumes. Rather, there have been slight variations in its frequency through time and hence, in its intake into living things existing at certain times. Therefore, although reported dates are roughly equivalent or close to real years in recent times (e.g. the last 12,000 years), they are not the same. For the last few thousand years it is possible to convert carbon dates to real years. This is made possible by the radiocarbon dating of materials of known calendrical ages such as the rings on certain very long-lived trees. By comparing the real and C-14 ages, correction factors or calibration curves have been developed to allow this conversion. All the conversions to real years presented in this volume are based on the calibrations provided by Klein et al. (1982). Klein et al. (1982) present the corrected and calibrated dates by *ranges* for each radiocarbon date and some authors in this volume present only the suggested calibrated date ranges. Others, however, use the method of Timmins (1985:43-44) which, rather than giving a range estimate, converts the radiocarbon date to a single calibrated date with a single sigma error estimate.

CHAPTER 2

THE GEOLOGICAL AND BIOLOGICAL ENVIRONMENT FOR HUMAN OCCUPATION IN SOUTHERN ONTARIO

P.F. Karrow & B.G. Warner

Introduction

This paper summarizes what we know of the geological and biological history of southern Ontario as a background for consideration of the history of human migration, survival, and settlement. Mapping by government geological surveys has provided detail on the history of ice retreat, and available publications are indexed on Figure 2.1.

Controversy and general lack of data leave open the question of when human occupation began. Suggestions of arrival before the last major glaciation (maximum extent about 20,000 years B.P.) are well emplaced in the literature, but our account will summarize the history from the time of glacial maximum.

The reader wishing other summaries of the Late Quaternary history of this region should consult Prest (1970), Dreimanis (1977a, 1977b), L. Chapman and Putnam (1984), Karrow (1984), Karrow and Calkin (1985), and Karrow and Occhietti (in press). More specific papers concerned with specific features or smaller areas will be referred to where relevant.

As far as information permits, all C-14 dates quoted in this paper will be to 2 sigma errors, representing 95% probability that the age is within the stated range.

Background and Setting

The modern physiography of southern Ontario [see L. Chapman and Putnam (1984) for the classic extensive treatment] is largely a product of events of the last major glacial stage, the Wisconsinan, and particularly of Late Wisconsinan time (ca. 25,000 to 10,000 B.P.). Except on the northern and northeastern margins of southern Ontario, where the ground surface is generally bedrock, the landscape is a complex mosaic of features and deposits produced during the last series of minor glacial advances (stades) and retreats (interstades) prior to the major withdrawal of the continental glaciers from the area. These features and deposits can be grouped according to the agency or manner of formation. Thus those formed by glacial action are represented by till plains (undulating to smooth deposits of unsorted glacial debris left by generally uniform ice retreat), end moraines (hummocky ridges of unsorted glacial debris formed at the ice margins when ice flow and melting were in balance), and drumlins (elongate smooth hills parallel to ice flow formed by actively moving ice). Glaciofluvial features were formed by flowing meltwater and include eskers (sand and gravel ridges formed in glacier tunnels) and outwash plains (generally level plains of accumulated sand and gravel). Glaciolacustrine features are those formed by glacial lakes ponded between the ice margin and higher ground; they include sand plains formed in shallow water and clay plains in deep water, while former shorelines are marked by beach ridges of sand and gravel and wave-eroded shorecliffs. The general distribution of some of these features is shown in Figure 2.2.

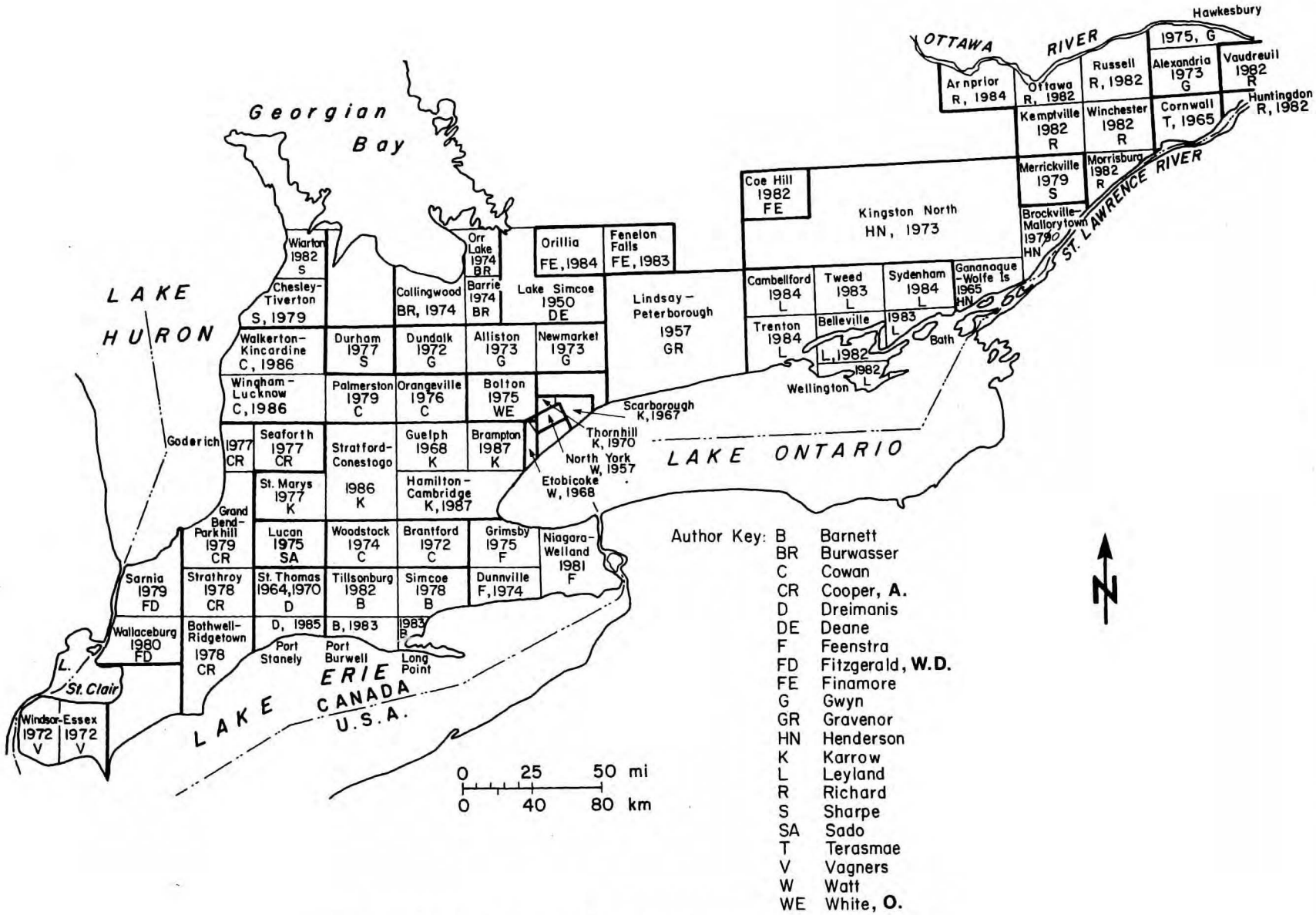

FIGURE 2.1: Index Map Showing Published Geological Maps and Reports.

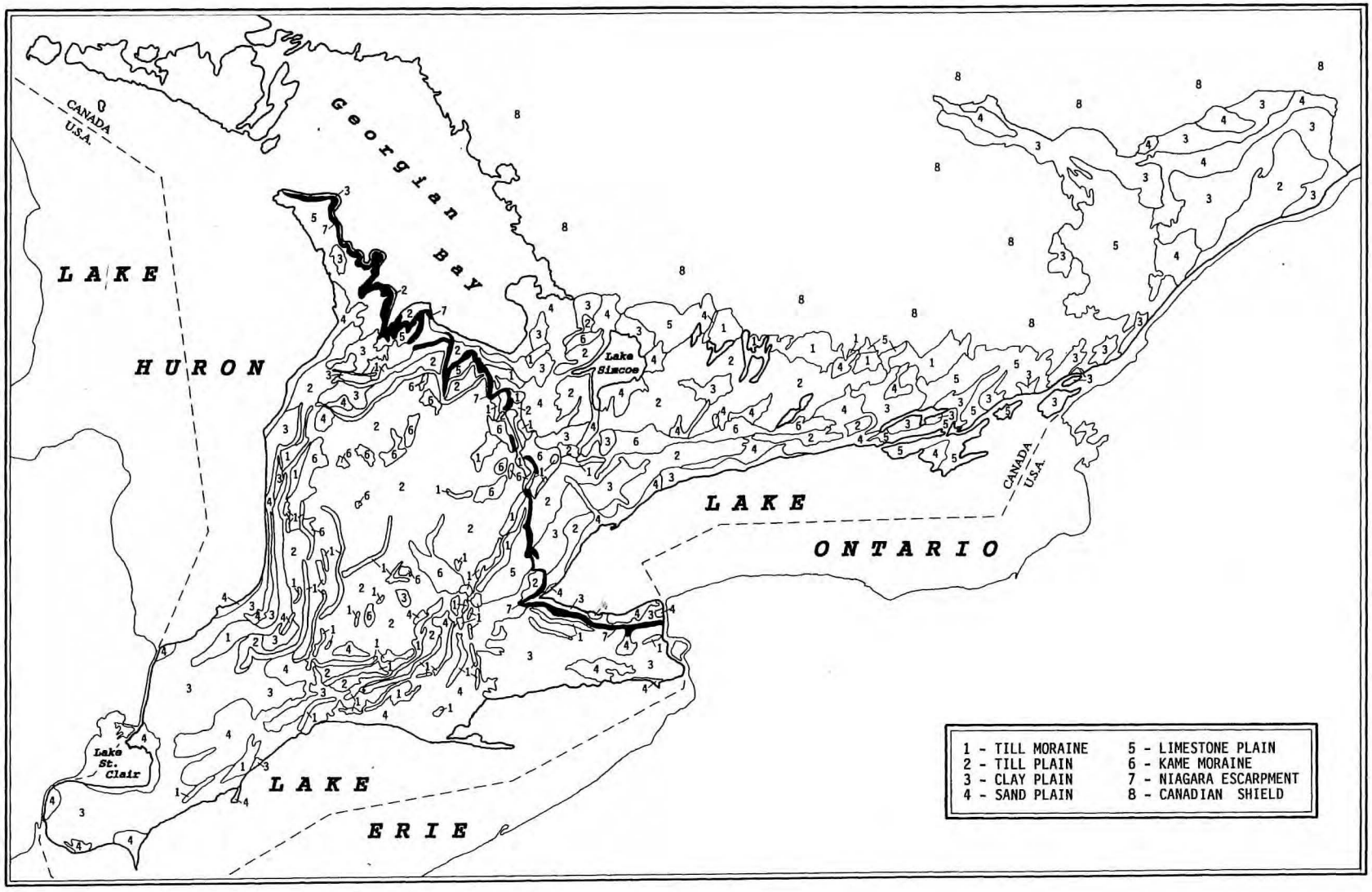

FIGURE 2.2: Generalized Physiography of Southern Ontario.

The modern vegetation of southern Ontario has been classified in various, although generally similar, ways by different investigators (e.g. Braun 1950; Rowe 1972; Barbour and Billings 1988). Ontario archeologists, following the lead of their Michigan counterparts, use Dice (1938, 1943). According to Dice (1943), all of southern Ontario is divided into two main biotic provinces: the Carolinian in the west and the Canadian in the east. The boundary of these two biotic provinces roughly corresponds to the boundary between Rowe's (1972) Deciduous and Great Lakes - St. Lawrence Forest region; it is Rowe's scheme that is followed by most biologists and paleoecologists today in Ontario. The Carolinian or Deciduous Forest zone is largely deciduous forest, comprising mainly nut-producing trees such as oak, hickory, chestnut, walnut, and beech. These trees are important food sources for human populations, by providing acorns and other nuts, and habitat for important game animals such as deer and turkey. The Canadian or Great Lakes - St. Lawrence Forest zone is a transitional belt with a mixture of more southern-type deciduous species and more northern coniferous and deciduous species, such as maple, birch, pine, hemlock, and spruce. In comparison this zone has fewer nut-producing species, and hence, fewer alternatives or subsistence options for humans than the Carolinian zone. The latter region is also less suitable for agriculture with its shorter and cooler growing-season.

Late Wisconsinan Time

Maximum Advance of Nissouri Stade

Over an interval of time several thousand years long, the glacier thickened and advanced to cover for the last time all of southern Ontario. One of the youngest dates before this advance is on wood from the stream deposits filling the St. Davids buried gorge near Niagara Falls (22,800 ± 450 : GSC-816), while many others of 20,000 to 25,000 years document its southward advance across Ohio, pushing over spruce trees which became incorporated in its debris (Dreimanis and Goldthwait 1973). Concurrently, plants and animals were forced to migrate southward ahead of the advancing ice.

The ice reached its southern limit of advance in southern Ohio about 20,000 years ago (Figure 2.3) and remained near its limit with minor fluctuations until about 17,000 years ago. Because of higher ground to the northeast, the ice was impeded in its advance and a major reentrant was left in the ice margin near Salamanca, in western New York; as a result, the glacial limit there is only about 100 km south of Niagara Falls. Eastward from there, however, the ice margin trended southeastward toward New York City and Long Island.

Erie Interstade

The first substantial warming of climate after the Late Wisconsinan glacial maximum was during the Erie Interstade, when most of the Erie basin, much of the Huron basin, and nearly all of southwestern Ontario became ice-free. There is little dating control on this milder interval but it is estimated to have peaked between 16,500 and 15,500 years ago (Morner and Dreimanis 1973). Large glacial lakes in the Erie and southern Huron basins accumulated extensive beds of clay and silt which were reworked by readvancing ice to form fine-grained tills during the subsequent Port Bruce Stade advance. Thin silt deposits near St. Mary's, Ontario, believed to be of this age, contain a pine-spruce tree pollen assemblage (Sigleo and Karrow 1977; Sado 1980) and imply at least a sparsely-vegetated land at this time (Figure 2.4).

Port Bruce Stade

A substantial readvance of the ice took place during the Port Bruce Stade about 15,000 to 14,500 years B.P., reaching well down into Ohio and again covering nearly all of southwestern Ontario (Figure 2.5). The large glacial lakes in the Huron and Erie basins were displaced by the expanding ice lobes, which thickened and overran adjacent land areas. A few small areas in southwestern Ontario along the line of juncture or interlobate line between the Huron-Georgian Bay and Erie-Ontario ice lobes were apparently not covered by this substantial readvance. Older till from the Nissouri Stade advance is at, or near, the surface in those areas. However, with their restricted size, ice

FIGURE 2.3: Maximum Extent of Glaciers. Dashed line: all time glacial limit; Solid line: Late Late Wisconsinan glacial limit about 20,000 B.P.

fronts were so near that these areas were much affected by Port Bruce meltwater sediment deposition. Most of southwestern Ontario's glacial features were formed by ice activity during Port Bruce time.

It was during the fluctuating retreat of Port Bruce ice that the notable succession of glacial lakes was initiated, leaving eroded shorecliffs, beach bars and spits, and extensive lacustrine clay plains as evidence of their former existence. It was also during this time that extensive land areas began to be exposed as they experienced their last glacial retreat and glacial lakes receded step-wise. These newly-exposed areas became the habitats for a succession of plant and animal assemblages to be described later in this paper. This biological history will emphasize plants as derived from study of fossil pollen and plant macrofossils, since they have been studied more than animal groups. There is some limited history of molluscs and insects, but they will only be mentioned briefly in this account. The record of vertebrates is sparse indeed; it will be referred to where appropriate.

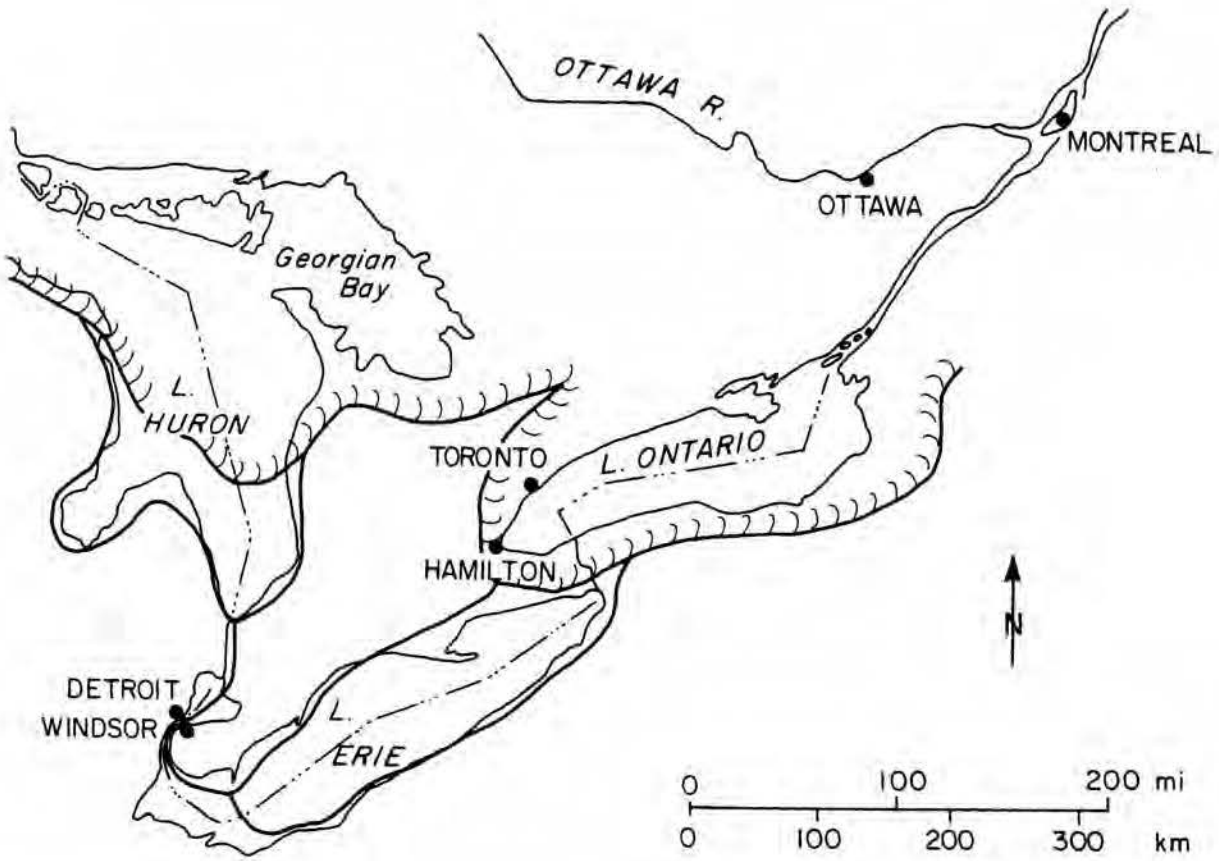

FIGURE 2.4: Erie Interstade. Postulated ice margin with Lake Leverett in Lake Erie Basin - about 16,000 B.P.

Shortly after the Port Bruce ice advance reached its limit, fluctuating ice recession widened a split along the interlobate line and by about 14,000 B.P. (Fullerton 1980) the first of the major glacial lakes, Lake Maumee, formed in the Erie basin. Changing lake outlets westward across Ohio and Michigan, affected by ice margin fluctuations, are registered as three or four separate water levels. Only Maumee II and III shore features have been recognized in Ontario, extending from northwest of Strathroy eastward into the Thames Valley and southeast beyond St. Thomas. Extension farther east remains poorly documented, although a few fragmentary features have been reported by Barnett (1985) as far east as Delhi. Concurrently, recessional moraines were formed by the Huron-Georgian Bay lobe (Milverton, Mitchell, Dublin, Lucan, Seaforth) and the Erie-Ontario lobe (St. Thomas, Norwich, Tillsonburg, Courtland).

The same ice recession also uncovered a large area in the north central part of the southwestern Ontario peninsula, creating what has been referred to as "Ontario Island". This area, extending northeast from London, included all or large parts of Perth, Huron, Bruce, Grey, Wellington, Dufferin, Waterloo, and Oxford Counties, characterized by extensive gentle till plains, drumlins, eskers, and innumerable local shallow depressions which trapped silt and clay in meltwater ponds. Surrounded as it was by retreating ice lobes on three sides and by glacial Lake Maumee in

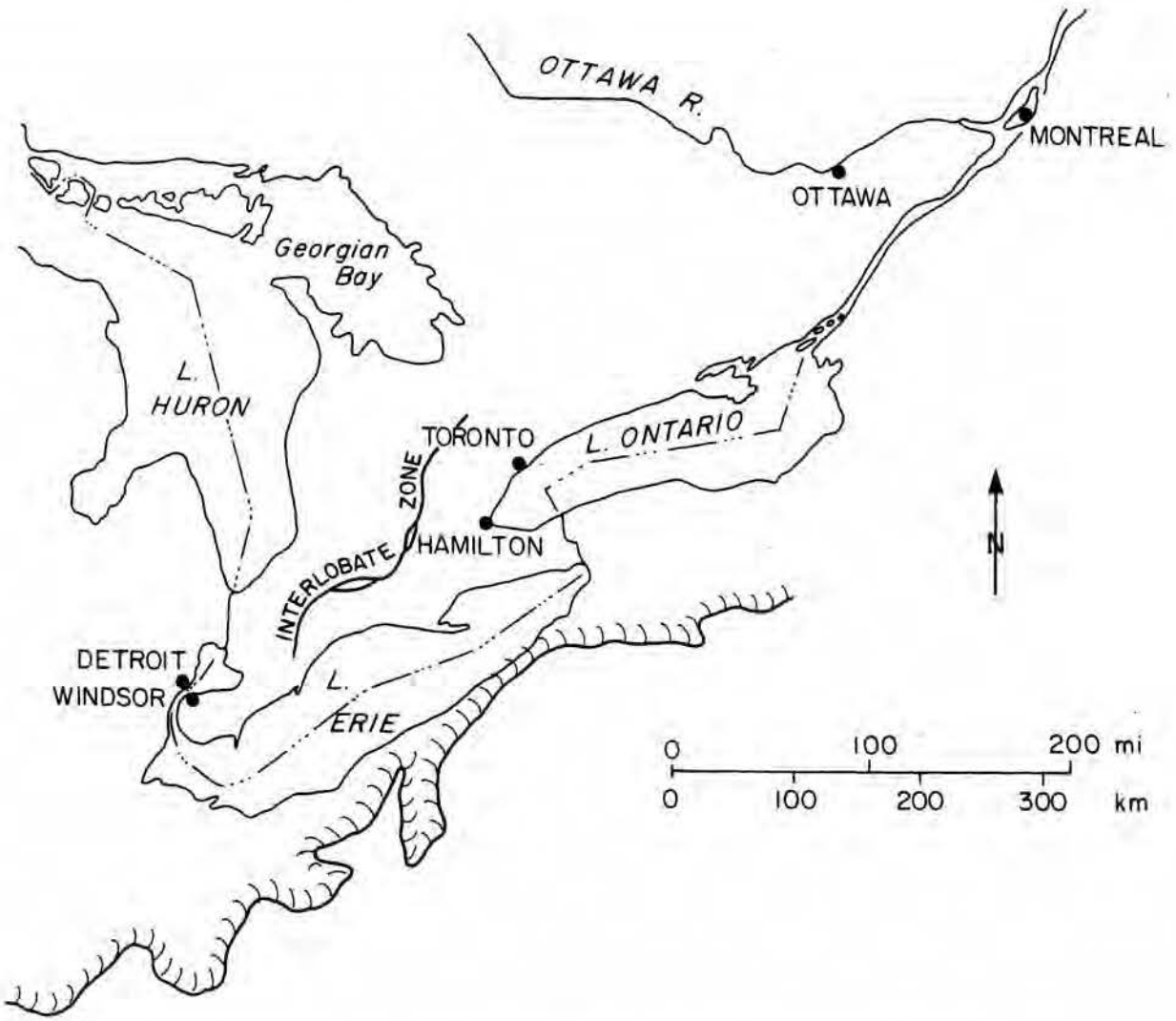

FIGURE 2.5: Limits of Port Bruce Readvance with Windows of Catfish Creek Drift in Ontario -about 15,000 B.P. (after Fullerton 1986).

the southwest, it must have been a hostile environment. Evidence of at least brief development of permafrost and resulting patterned ground has been described by A. Morgan (1982).

Probably Ontario Island "dried out" rather sluggishly. Poor drainage, cold climate, and surrounding ice and lakes would have remained major barriers to the influx of plants and animals. However, by later in this trend of glacial retreat and lowering lake levels, and into the subsequent Mackinaw Interstadial, definite signs of the arrival of plants have been documented in a few places.

Mackinaw Interstade

A milder interval, accompanying continued ice retreat, has been dated between 13,500 and 13,000 B.P. The Paris, Galt, and Moffat moraines were formed early in this interval and truncate earlier-formed Erie lobe moraines. This interval appears to have brought about rapid and extensive ice retreat far up into the Huron basin and well back into the Ontario basin. As a result, glacial lakes were allowed to drain successively down through Arkona to Ypsilanti levels with outflow north across the Niagara area, east to the Hudson valley, and to the Atlantic Ocean for the first time. The traceable Arkona shoreline extended from northeast of Arkona to Strathroy, St. Thomas, Tillsonburg, and Delhi. Having been later submerged by higher water levels, it is mantled by younger lake sediments and difficult to trace. The much lower Lake Ypsilanti water plane has no known shoreline features.

Additional large areas of southwestern and even south-central Ontario were exposed to weathering and plant migration (Figure 2.6). Vegetation must have remained limited and sparse, however, since little evidence of its presence has been found. Ontario sites yielding dated terrestrial plant material from this interval are: 1) a spruce log from overlying till along Lake Huron east of Sarnia dated 13,100 ± 110 (GSC-2213; Gravenor and Stupavsky 1976); and 2) *Dryas integrifolia* leaves from deltaic sand along Lake Erie near Long Point dated 13,360 ± 880 (BGS-929; Warner and Barnett 1986). The oldest postglacial records in lakes and bogs of Ontario Island extend back to about the end of this interval (e.g. Gage Street, Kitchener; Schwert et al. 1985) and it is evident that rapid colonization by plants, insects, and molluscs was taking place by about 13,000 B.P.

The dating of many of the earliest sediment records of this time and up to 11,000 or 10,000 years B.P. or even later, suffers from several problems. Organic content of sediment is commonly low and fine-grained. Contamination by reworked Paleozoic carbonate rocks causes serious problems in dating such sediment, as do plants and animals living in water carrying old carbonate in solution. Only dates on terrestrial plants, particularly wood, can be considered reliable. Aspects of these problems have been discussed by Karrow and Anderson (1975), Turner et al. (1983), and Karrow et al. (1984).

Port Huron Stade

The last major ice readvance in southern Ontario (Figure 2.7) was to the Ontario equivalents of the Port Huron moraine of Michigan (i.e. the Wyoming, Banks, and Waterdown Moraines). The Ontario lobe margin did not form large moraines -- the equivalents of the modest Waterdown moraines splaying out southward across the Niagara Peninsula; the outer limit is marked by no moraine at all near Lake Erie. Surface glacial features of south-central and southeastern Ontario were formed mainly around this time.

This ice advance blocked eastward drainage from the Erie basin established during the Mackinaw Interstade, and raised water levels in the Erie and southern Huron basins to form Lake Whittlesey, restoring westward drainage across Michigan. The Lake Arkona beach (and the undiscovered beach of Lake Ypsilanti) were flooded by this water rise and parts of the Arkona beach were buried by till deposited during the Port Huron advance. The Lake Whittlesey shoreline, on the other hand, is prominent and has been recognized from west of Exeter, to southwest of London, by St. Thomas, Aylmer, Tillsonburg, Paris, to east of Cambridge, where it delineated an archipelago of drumlins.

The age of this ice advance is closely interpolated as being near 13,000 B.P. While most of southern Ontario west of the Niagara Escarpment remained free of ice (only a narrow belt inland from Lake Huron, all of the Bruce Peninsula, and the Niagara Peninsula were ice covered), east of the Escarpment ice again covered nearly all present land areas; an extended interlobate line between the Lake Simcoe and Ontario ice lobes follows the crest of the Oak Ridges moraine.

During the spasmodic retreat of Port Huron ice, a succession of modest-sized moraines was formed across the Niagara Peninsula, the Fort Erie, Niagara Falls, and Vinemount being most traceable and corresponding to the several ridges of the Waterdown moraines farther north. The youngest moraine in the west end of the Ontario basin is the

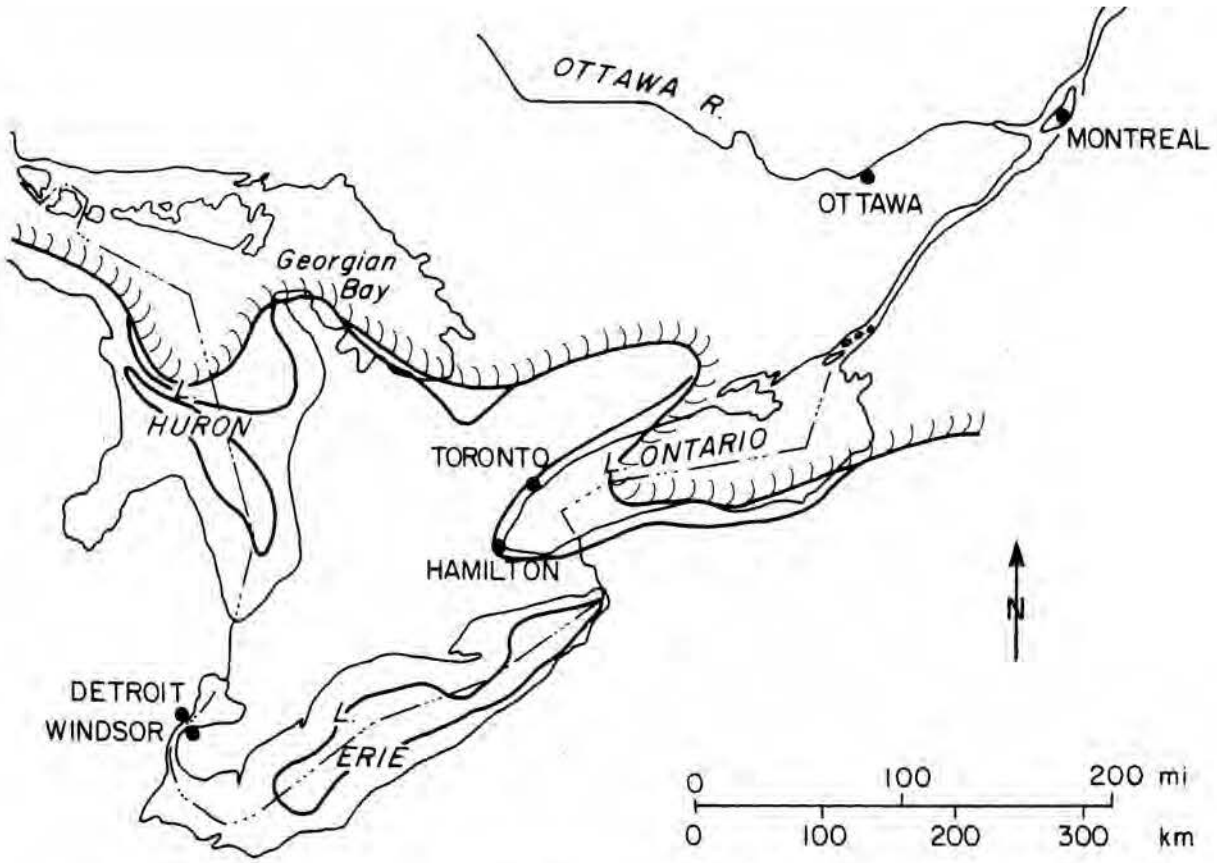

FIGURE 2.6: Mackinaw Interstade Postulated Ice Margin. Lake Ypsilanti in Erie basin about 13,300 B.P. (after Barnett 1979 and Calkin & Feenstra 1985).

subdued Trafalgar moraine, north of which a succession of short-lived levels of Lake Peel formed east of the Escarpment (Karrow and Warner 1988).

Between Lake Whittlesey and Lake Peel, however, there was a sequence of glacial lakes with a succession of mainly lowering levels, reflecting the fluctuating retreat of the Huron and Erie-Ontario ice lobes. They are, in chronological order: Lake Warren, with three or four levels draining westward across Michigan; Lake Grassmere with outlet uncertain; Lake Lundy, probably with eastward drainage, Early Lake Algonquin, and Lake Dunnville. The inclusive succession of lakes from Whittlesey to Peel appears to have spanned less than 1,000 years, with each level representing, in some cases, only a century or less of existence.

The several Warren beaches first appear in Ontario at Paisley and follow the west edge of the Wyoming moraine from Kincardine to Sarnia, then swing southeast to St. Thomas, Simcoe, Brantford, and die out near Dundas. Lundy and Grassmere shorelines have only been recognized with uncertainty from Kincardine to Sarnia, north of Lake Erie, and to near Brantford. The Early Algonquin beach is only hypothetical in the Huron basin with a few isolated features correlated with it in the Erie basin. Lake Dunnville (Calkin and Feenstra 1985) was a local low-level lake restricted to the eastern end of the Erie Basin. At the mouths of major rivers extensive deltas developed, producing the Caradoc and Norfolk sand plains of the Thames and Grand River valleys respectively. These and oth-

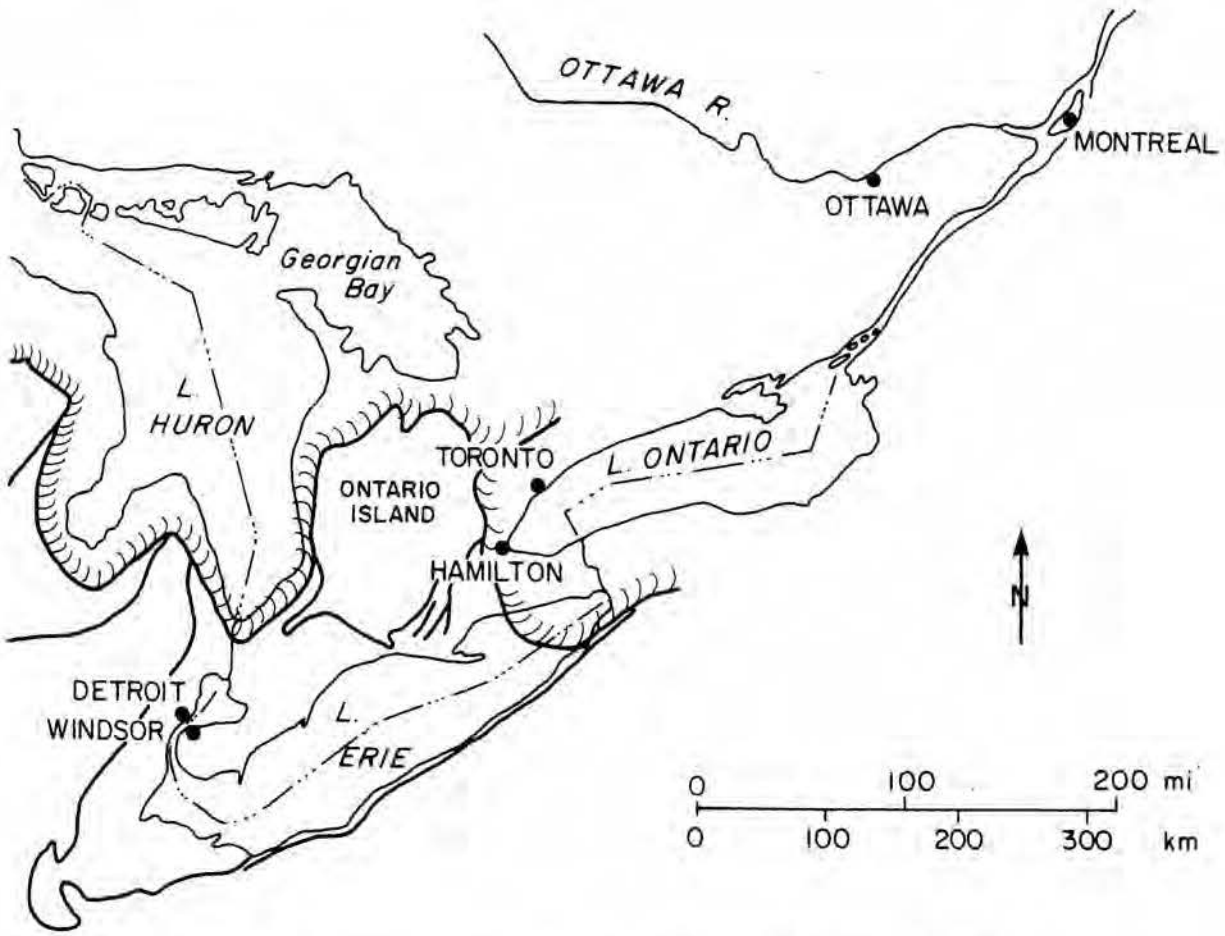

FIGURE 2.7: Port Huron Readvance and Lake Whittlesey in Erie and Huron Basins - about 13,000 B.P.

er sand plains in southwestern Ontario, as well as many of the abandoned strandlines of this and other late glacial times, are important in the prehistory of the area. In many areas, the sandy, well-drained soils were the most suitable for growing Native horticultural crops. Further, with the adoption of an agriculturally based economy about A.D. 900, the sand plains were actively sought out for settlement although not necessarily because they were the best available soils for horticulture. Rather, in addition to being suitable for growing crops, these areas were rich in natural foodstuffs such as nut-bearing trees which still played a very major role in the subsistence of the earliest settled villagers (see Williamson: this volume).

With continuing ice retreat and lake regressions, the land area of southern Ontario progressively increased. Barriers to the influx of plants and animals steadily diminished. By 12,000 B.P. spruce forest was probably well established.

Lake Iroquois and Lake Algonquin

Drainage eastward, established about the end of Lake Warren, was the prevailing mode from then on as the ice retreated through the Lake Ontario basin. After the Lake Peel succession to the northwest of the Ontario basin, and a succession of short-lived local lakes in west-central New York, an outlet sill at Rome, New York, became the controlling outlet for glacial Lake Iroquois in the Ontario basin. Outflow from there followed the Mohawk Valley and Hudson Valley to the sea. This lake grew in size as the Ontario lobe receded, probably by calving over a broad front. Lake Iroquois, dated on poplar and spruce wood in its beach, and by plant detritus in its lagoonal sediments, averages near 12,000 years old. A molluscan fauna has been identified from its nearshore sediments (Karrow et al. 1972) and at several places in the west end of the basin, bison and mammoth bones have been found in its beach deposits. Its shoreline is marked by well-developed shorecliffs and valley mouth gravel bars from St. Catharines to Hamilton, Toronto, and Belleville.

Concurrent ice retreat in the Huron and Georgian Bay basins brought about coalescence of hypothetical Early Algonquin in the Huron basin and Lake Schomberg south of Georgian Bay. The latter lake formed between the ice and high ground of the Niagara Escarpment and Oak Ridges moraine, but like its twin to the south, Lake Peel, experienced rapidly dropping levels which developed no obvious beaches. Continued retreat opened the Fenelon Falls outlet (Finamore 1985) down the Trent Valley to the Ontario basin, creating the Kirkfield low-water phase of the Huron-Georgian Bay basins. Outflow was initially into Lake Iroquois of the Ontario basin.

Continued retreat of the Ontario ice lobe exposed the drumlinized till plain north of Lake Ontario and Lake Iroquois expanded northeastward. Eventually a lower outlet was uncovered south of Montreal at Covey Hill and Lake Iroquois dropped step-wise through the Frontenac, Sydney, Belleville, and Trenton levels. The later and lower levels were confluent with lakes in the Lake Champlain basin in New York and had levels controlled by sills down the Hudson Valley, through which outflow reached the Atlantic Ocean. It is believed that the post-Iroquois levels were occupied briefly with related shoreline features not nearly so well developed as that of Lake Iroquois. Drainage from the upper Great Lakes continued down the Trent Valley during this time.

During glacial recession, the lessening ice load allowed isostatic rebound or rising of the Earth's crust to take place, causing all the abandoned shorelines to tilt upward to the north toward the ice center. Upwarp was more rapid earlier and has slowed, but continues to the present. Consequently, the tilt is greater for older shorelines (i.e. they diverge northward) and the tilt on the individual shorelines increases northward. Even during the existence of particular lakes, upwarp caused waters to transgress on the shoreline south of individual basin outlets and regress from the land north of the outlet (Figure 2.8). The effect of the tilting in the Huron-Georgian Bay basins was to cause a transgression around the shores of the lake south of the Fenelon Falls outlet, creating the main Algonquin beach (Figure 2.9). The shoreline extends around the Lake Simcoe basin, around the base of the Bruce Peninsula and southwest to Kincardine, beyond which the Algonquin shoreline has been truncated and removed by later shore erosion south to Grand Bend. Most stream valleys east of Lake Huron contain the imprint of the Algonquin level as a flat raised terrace graded to this level (Karrow 1986b). Sediments on these terraces and lacustrine sands south of Georgian Bay yielded molluscs, insects, and plants which document the spruce forest and its transition to pine forest. Radiocarbon dates on wood and plant debris have established that the period of rising Algonquin levels spanned approximately the interval from 11,300 to a little after 10,500 years ago (Karrow et al. 1975; B. Miller et al. 1985; Karrow 1986b).

By this time there is definite evidence of humans in southern Ontario, with association with the beaches of Lake Algonquin, Lake Iroquois, and even some older beaches, known from several sites (Ellis and Deller: this volume).

During much of the same time period from 12,000 to 11,000 B.P. now extinct mammals were present on the lake plains north of Lake Erie. As the Erie basin lakes were drained progressively lower between 13,000 and 12,000 B.P., extensive tracts of poorly drained land were revealed. Mastodons and mammoths lived on this plain and remains, particularly of mastodons, have been found at many locales, usually encountered in the course of the drain-

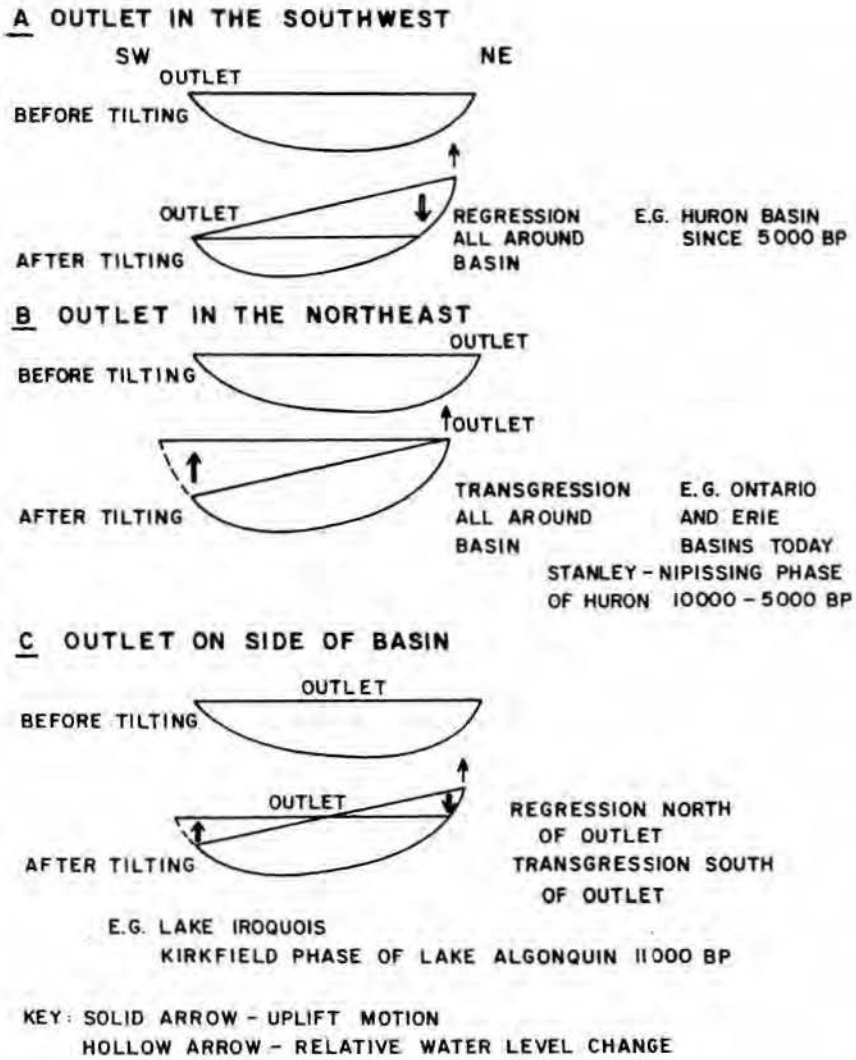

FIGURE 2.8: Basin Tilting, Outlet Position, and Water Level Changes.

age of wet spots for agriculture (Figure 2.10). Only a few of these occurrences have been dated and as yet our knowledge of them gained from careful study of scientifically excavated sites, is very limited. Dreimanis (1967, 1968) speculated on climatic factors in the demise of mastodons, and Pilny et al. (1987) have reported on the most recently discovered mammoth in southern Ontario, from west of Waterloo, dated at 10790 ± 150 (WAT-999) on bone collagen. McAndrews and Jackson (1988) have most recently reviewed southern Ontario occurrences. Why the known sites are so abundant on the lake plain north of Lake Erie and rare elsewhere remains a mystery. Mastodon remains are much more common than mammoths; these large vertebrates have been the subject of much public attention, while our knowledge of smaller vertebrate species is almost totally lacking. Postglacial vertebrate paleontology in Ontario is largely a void; studies from archeological sites have the potential to help overcome this deficiency.

Uplift of the Kirkfield outlet gradually raised the water level in the southern Lake Huron basin until it spilled southward through the Port Huron outlet toward the Erie basin and ended drainage down the Trent Valley. With the drainage of lakes in the Erie basin to the east and the creation of Lake Iroquois, erosion of the Niagara gorge began

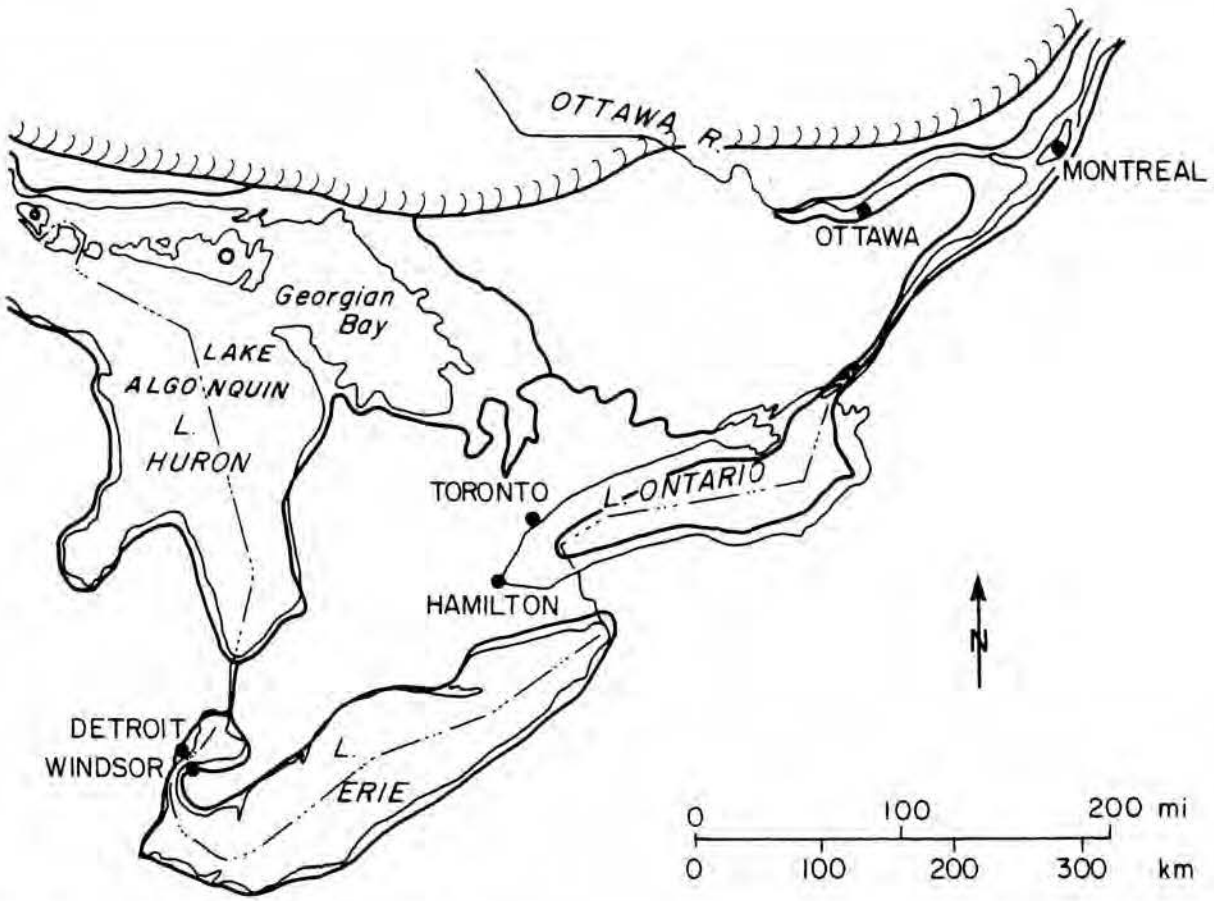

FIGURE 2.9: Lake Algonquin - about 10,500 B.P.

at Queenston where the Niagara River flowed over the Escarpment. The Erie basin was occupied by a series of small lakes and rivers, with the largest, Early Lake Erie, situated in the eastern and deepest basin. Uplift at the Fort Erie outlet gradually raised the water level in the Erie basin to create present Lake Erie during the subsequent 12,000 years, while the Niagara River eroded headward to create the present Niagara Gorge.

Drainage of Main Lake Algonquin through the Port Huron outlet probably did not last long because during the rise of water level from the Kirkfield low-water phase, the ice margin was retreating northward in the country east of Georgian Bay. Eventually this opened a succession of outlets eastward to the Ottawa Valley. Two groups of post (Main) Algonquin beaches have been recognized: an upper group thought to converge southward to the Port Huron outlet, and a lower group thought to be parallel and related to the succession of outlets referred to above. Much more careful field work is needed to document the relationships of the various shorelines. In any case, drainage through outlets to the northeast (collectively the "North Bay outlet") brought Lake Algonquin to an end between 10,500 and 10,000 B.P. (Karrow et al. 1975). This major event in Great Lakes history brought into existence Lake Stanley in the Huron basin and Lake Hough in the Georgian Bay basin, both very low water phases which exposed about half the present lake floor areas as dry land (Figure 2.11). This drainage must have had a significant effect on local climates and flora and fauna, opening large tracts to colonization. Since such drainage was rapid, one can only speculate on its effect on the economy, religion, and society of the human population. Streams extended themselves across the newly-exposed lake floors and their downward erosion may have destroyed some evidence of human occupation along their banks.

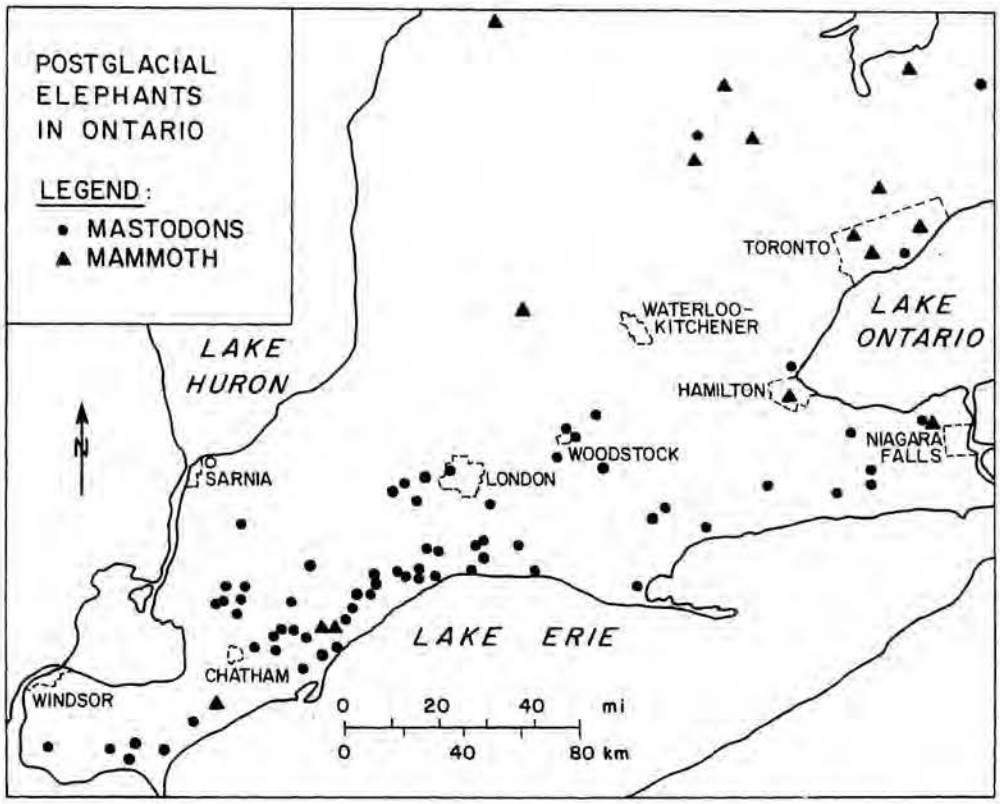

FIGURE 2.10: Post-Glacial Elephants in Ontario [after Dreimanis (1967) and McAndrews and Jackson (1988), with additions].

At this time shortly after ice retreat, isostatic rebound was still rapid, so the now controlling outlet for the Georgian Bay basin rose, causing Lake Hough to expand until it drowned the outlet river from Lake Stanley and the two coalesced and continued to rise over the next 5,000 years.

Champlain Sea

Post-Iroquois glacial lakes in the combined Ontario and Champlain basins dropped to levels much below the present Lake Ontario level in the west end of the basin because of the marked crustal depression from ice load in the St. Lawrence Valley. When the ice margin had retreated sufficiently at Quebec City, the remaining lake dropped to the sea level of that time and a continuous water body extended into the eastern Lake Ontario basin for a short interval of time (Pair et al. 1989). Sea level world-wide was then considerably lower than present, but even so, because of great isostatic crustal downwarping, a large area of easternmost Ontario was covered by marine waters in a marine embayment known as the Champlain Sea (Figure 2.12).

There has been recent controversy about the timing and manner of formation of the Champlain Sea (Gadd 1980a; Karrow 1981), but majority opinion favours the traditional history of the Champlain Sea succeeding glacial lakes which extended northeastward during ice retreat. The Champlain Sea existed for about 2,000 years (about 12,000 to 10,000 B.P.) with diminishing extent during that time as crustal uplift exceeded the rate of sea level rise during deglaciation. Uplift of the Ontario basin outlet severed the marine connection after a few centuries and Early Lake Ontario was formed about 11,500 B.P. with rising water level in a transgression that continues today in the Ontario basin.

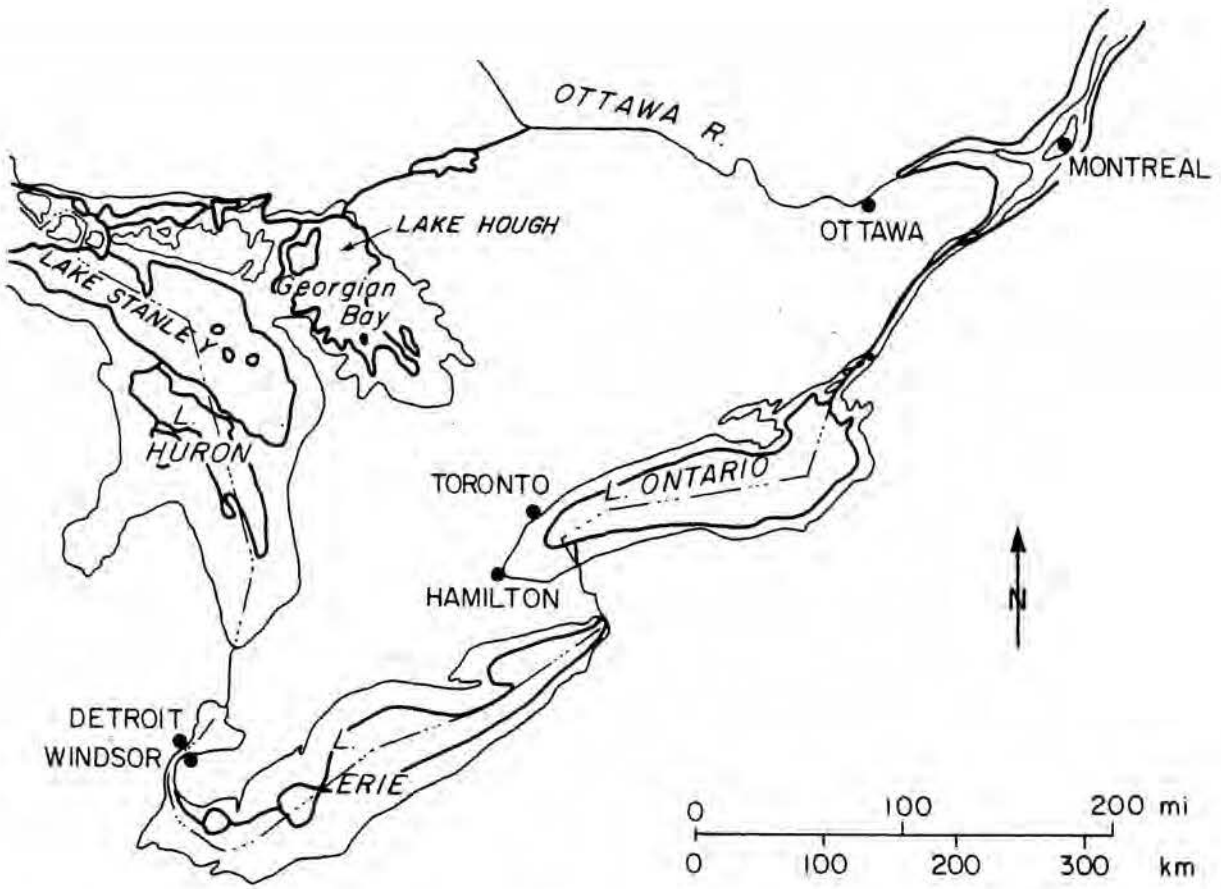

FIGURE 2.11: Low Water Levels. Lake Hough in Georgian Bay, Lake Stanley in Huron basin, Early Lake Erie in the Erie Basin - about 10,000 B.P. [in part after Sly and Lewis (1972)].

The extent of the Champlain Sea is commonly difficult to trace, but it had estuaries extending up the St. Lawrence and Ottawa valleys and south into the Lake Champlain basin (Figure 2.12). It exceeded 100 m in depth along the Ottawa Valley. Large deltas were built by rivers and a nearly-continuous succession of intermittent beaches traces its gradual withdrawal. A rich fauna of marine mammal remains (whales, seals, walrus; Harington 1977) and invertebrates (F. Wagner 1970; Rodrigues and Richard 1986) has been identified, although very few plant remains have been found in its sediments.

The large outflow from Lake Algonquin and the far-travelled outflow from the drainage of Lake Agassiz (centered in Manitoba but drained eastward through the Superior and Huron basins) poured into the declining levels of the Champlain Sea, likely creating an ecological disaster among its faunas.

The Sea was succeeded by a lake, then by the extending and eventually confluent Ottawa and St. Lawrence Rivers. The legacy of the Sea was a widespread clay plain underlain by fossiliferous marine silt and clay subject to disastrous landslides along river banks.

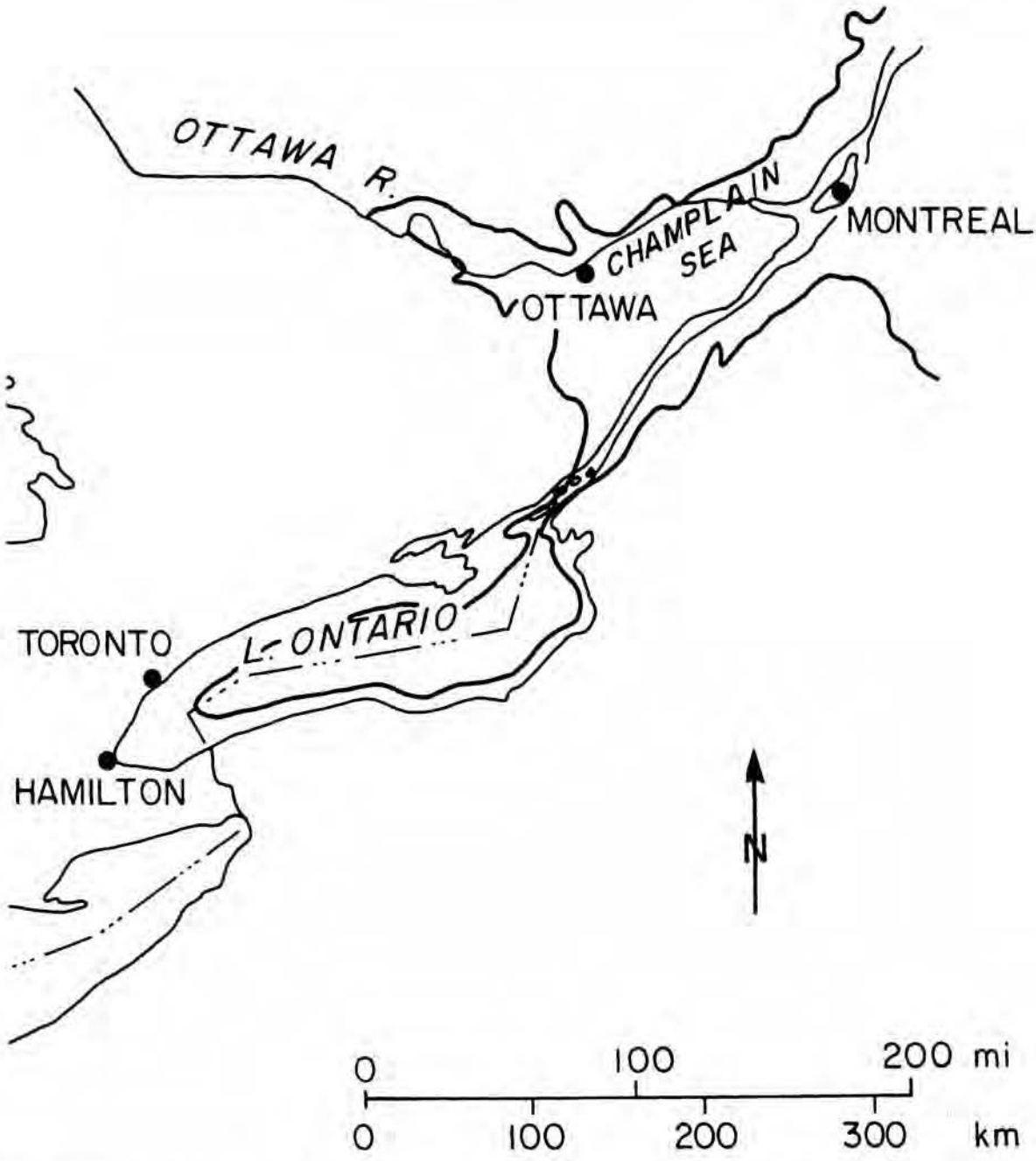

FIGURE 2.12: The Champlain Sea Near its Maximum Extent - about 11,500 B.P.

The Era of Isostatic Effects: The Nipissing Phase

Isostatic uplift at diminishing rates continued to affect the paleogeography of the Great Lakes region, even though the glacial margin had retreated into northern Ontario by 10,000 B.P. In the Ontario and Erie basins, uplift raised the water levels throughout the basins in a continuous process to the present. This process continues in the Ontario basin at a rate of about 30 cm per century and is reflected in drowned river mouths particularly evident in the west end of the basin (e.g. Jordan Harbour).

More dramatic, however, were the events in the Huron and Georgian Bay basins, whose outlet at North Bay rose so far as to reach the elevation at Port Huron, at which time drainage was returned southward through the Erie basin about 5,000 B.P. (Karrow 1980). This created the high water Nipissing phase which inundated large areas probably previously occupied by humans (Ellis et al.: this volume), initially with outlets at North Bay, Chicago, and Port Huron but, as uplift continued, North Bay was abandoned and sill erosion at Port Huron lowered water level sufficiently to cause Chicago to be abandoned as well. Nipissing deposits yield abundant molluscs (B. Miller et al. 1985) and plants, which show the moderation of climate and development of plant successions between 10,000 and 5,000 B.P. Indeed, there is indication that climates became slightly warmer than present and subsequently deteriorated.

The return of drainage through the Erie basin increased the flow of the Niagara River which then cut the wider Upper Great Gorge. Downcutting in the Port Huron outlet lowered water levels gradually, with one relatively prominent intermediate level recorded about 3,000 B.P. -- Lake Algoma. The lowered water levels left a second abandoned terrace graded to the Nipissing level in some river valleys east of Lake Huron, similar to those from the earlier Algonquin level (Karrow 1986b). Terrace history in most other valleys remains to be worked out, but it is reasonable to assume they too relate to water levels in the Great Lakes basins. The working out of their history would provide useful background to the understanding of human settlement, although areally they are not very significant.

Uplift also affected smaller water bodies. Holland Marsh was created by southward tilting at the end of Cook Bay in Lake Simcoe, backing up the drainage of the Holland River. Similar marshes were created at the south end of Lake Scugog. Streams draining to the northeast have had their gradients lessened, while those draining to the southwest had them increased.

Aside from drainage changes, the last 10,000 years have been largely passive geologically speaking. Undrained depressions have received slope wash sediments and have accumulated marl and peat. Terraced river valleys have been eroded, and weathering has developed the present soils, affected by changing climate and biota. The details of those changes will be described in subsequent sections.

Vegetation History

Southern Ontario has a long tradition of studies dealing with the Quaternary origins of its vegetation. Dawson's and Penhallow's reports of macroscopic plant remains from the Toronto and Ottawa regions were among the first reports of Quaternary fossils in North America (Warner 1986). Auer's pollen profiles from several peatlands, published in 1927, laid the groundwork for future investigations on the Holocene pollen stratigraphy of southern Ontario.

Since the 1960's, considerable progress has been made toward understanding the Quaternary vegetational history of southern Ontario. Several large areas of southern Ontario remain for which there are no or only a few postglacial and Holocene vegetational records, such as Essex, Lambton, and Elgin counties, and extreme southeastern Ontario, though there are pollen records for a large representative part of southern Ontario (Figure 2.13 and Table 2.1). Reviews of the pollen record and vegetation history of southern Ontario appear in Liu (1981), Holloway and Bryant (1985) and J. Ritchie (1987).

Southern Ontario presents a challenging and important area for studying Late Quaternary vegetation history for several reasons. The forests of the area are among the most diverse forests in North America (Maycock 1963; Rowe 1972). Climatically, the region serves as a crossroads for weather systems originating from the Arctic, the Pacific Ocean, the Atlantic Ocean, and occasionally the tropics. The timing and intensity of these systems along with local variations created by topography, the proximity of the Great Lakes, and the prevailing winds give rise to the distinctive climate of southern Ontario (D. Brown et al. 1974). Finally, the array of landscapes, physiographic features, and soil types in a relatively small geographical area is impressive. More importantly, the south-central

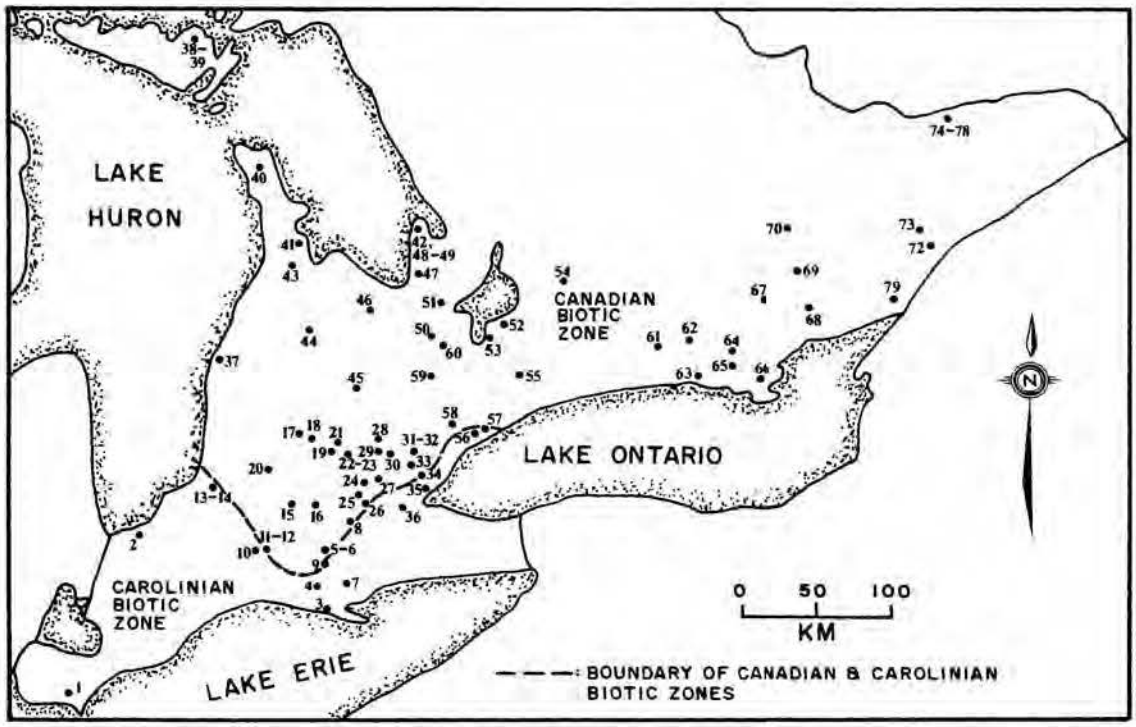

FIGURE 2.13: Late Wisconsinan and Holocene Fossil Sites from Which Pollen or Plant Macrofossils or Both Have Been Studied. See Table 2.1 for key to site names.

portion of the Great Lakes region was the first region to become free of glacier ice during the last or Late Wisconsinan stage. Consequently, during periods of reduced glacier extent and water volume in glacial lake basins, the first plants and animals, and probably humans, entered eastern Canada via the southern Great Lakes region.

The emphasis of this part of the paper is paleoenvironmental reconstruction based on paleobotanical data, as the purpose of this chapter is to provide an assessment of past environments in the context of human settlement. As such, paleoenvironmental inferences are largely hypothetical and will be biased towards our own subjective reasoning. Wherever possible, we will attempt to summarize the available factual record as registered in the pollen and macrofossil data, followed by our own, sometimes intuitive and perhaps contentious, environmental reconstructions. The reader is asked to accept our biases because there is not enough space in a paper such as this to discuss in detail problems of interpretation of the fossil record such as redeposition and reworking, details of the origin and migration of major taxa, and timing of vegetational changes. The features emphasized are: a) the possible species composition and distribution of past vegetation, b) environmental factors which contributed to this vegetation, and c) the paleoclimatic implications. Common names of plant species will be used in the discussion but for reference purposes, the scientific names are provided on Table 2.2.

Late Wisconsinan Environments

A treeless landscape with dwarf shrub and herbaceous taxa confined to modern Arctic latitudes and areas north of treeline today, characterized a broad belt along the periphery of the ice front during the Late Wisconsinan ice maximum. Some spruce trees, krummholtz or erect forms, isolated or in small groves, were nearby though not at all abundant. Open spruce forest with "tundra-like" understory was present farther west (Watts 1983; Jacobson et al. 1987). This association extended northwards into southwestern Ontario with the retreating ice front during the Erie

TABLE 2.1: List of Fossil Pollen Sites in Southern Ontario.

MAP No.*	SITE NAME	INFERRED TIME INTERVAL (YEARS B.P.)	OLDEST C-14 DATE (YEARS B.P.)	YOUNGEST C-14 DATE (YEARS B.P.)	SOURCE
1.	Verbeke	10,000	9830 ± 280 (BGS-228)	-	C. Winn 1977
2.	Sarkoa	6000-0	5490 ± 80 (WAT-960)	3340 ± 70 (WAT-967)	McAndrews, unpublished
3.	Clear Creek	9000-3900	6980 ± 120 (BGS-190)	3900 ± 200 (BGS-142)	Barnett et al. 1985
4.	Mabee	-	11,660 ± 140 (BGS-407)	11,150 ± 280 (BGS-412)	Barnett 1982
5.	Lake Hunger	13,000-0	15,180 ± 200 (BGS-266)	1420 ± 200 (BGS-231a)	R. Winn 1975
6.	Lake Hunger Bog	13,000-0	-	-	C. Winn 1977
7.	Lake Lisgar	13,000-0	-	-	R. Winn 1975
8.	Colles Lake	13,000-0	12,930 ± 800 (BGS-366)	2050 ± 220 (BGS-322)	C. Winn 1977
9.	Cornell Bog	13,000-0	12,950 ± 440 (BGS-421)	9840 ± 280 (BGS-419)	Barnett 1982
10.	Walker Pond I & II	12,200-0	12,190 ± 230 (GSC-620)	4890 ± 280 (BGS-392)	C. Winn 1977
11.	Pond Mills Pond	10,500-0	7960	-	McAndrews 1981
12.	Pond Mills I	10,500-0	10,150 ± 320 (BGS-390)	4270 ± 260 (BGS-392)	C. Winn 1977
13.	Parkhill	11,000-5000	10,870 ± 90 (WAT-376)	5410 ± 100 (WAT-392)	McAndrews, unpublished
14.	Brophy Ditch	5000-4000	5080 ± 250 (WAT-245)	4570 ± 95 (I-9355)	McAndrews, unpublished
15.	Wildwood Silts	-	-	-	Sigleo & Karrow 1977
16.	Maplehurst Lake	12,500-0	12,500 ± 180 (GSC-1156)	580 ± 130 (GSC-2024)	Mott & Farley-Gill 1978
17.	Poole Farm Section	13,000-9000	12,550 ± 240 (WAT-1511)	10,790 ± 150 (WAT-999)	McAndrews & Jackson 1988
18.	Ellice Bog	12,000-11,000	11,500 ± 160 (GSC-160)	-	T. Anderson 1971
19.	Sunfish Lake	13,000-0	15,950 ± 850 (I-4288)	10,550 ± 220 (I-4652)	Sreenivasa 1973
20.	Forest Pond	12,000-0	11,250 ± 520 (BGS-363)	2640 ± 260 (BGS-400)	C. Winn 1977
21.	Erbsville Bog	13,000-0	-	-	Sreenivasa 1968
22.	Gage Street	13,000-6900	20,600 ± 1300 (WAT-166)	6900 ± 100 (WAT-265)	Schwert et al. 1985

Table 2.1: continued.

MAP No.*	SITE NAME	INFERRED TIME INTERVAL (YEARS B.P.)	OLDEST C-14 DATE (YEARS B.P.)	YOUNGEST C-14 DATE (YEARS B.P.)	SOURCE
23.	Fischer-Hallman	12,000-10,500	12,000 ± 180 (WAT-1685)	10,530 ± 180 (WAT-1372)	Karrow and Warner 1988
24.	Unnamed Lake	13,000-0	-	-	Bell 1965
25.	Pinehurst Lake	12,000-9000	-	-	McAndrews, unpublished
26.	Hams Lake	10,400-0	10,400 ± 150 (GSC-3956)	430 ± 80 (GSC-3968)	Bennett 1987
27.	Oliver's Bog	7750-0	7750 ± 100 (WAT-1744)	-	Warner and Kubiw 1988
28.	Oilwell Bog	7200-0	7230 ± 280 (WAT-304)	-	Baerg 1978
29.	Little Lake	10,000-0	9990 ± 300 (WAT-657)	2740 ± 120 (WAT-600)	Turner et al. 1983
30.	Crieff Kettle Bog	12,000-0	11,950 ± 350 (TB59-69)	-	Karrow 1987b
31.	Crawford Lake	970-0	-	-	McAndrews and Boyko 1988
32.	Crawford Bog	13,000-0	-	-	Karrow 1987b
33.	Miller Lake	13,000-0	-	-	McAndrews, unpublished
34.	Lake Medad	12,000-0	10,290 ± 260 (BGS-29)	-	Karrow 1987b
35.	Peatsah	12,000-9000	12,140 ± 380 (WAT-742)	10,740 ± 150 (WAT-692)	Roberts 1985
36.	Copetown Bog	12,000-0	9320 ± 180 (GSC-130)	-	Karrow 1987b
37.	Kincardine Bog	12,000-0	11,200 ± 170 (GSC-1374)	10,600 ± 150 (GSC-1366)	T. Anderson 1971
38.	Greenbush Swamp	10,500-0	9930 ± 90 (WAT-579)	4340 ± 120 (WAT-624)	Warner et al. 1984
39.	Perch Lake	10,500-0	9530 ± 340 (WAT-615)	-	Warner, unpublished
40.	Shouldice Lake	10,000-0	9390 ± 130 (WAT-735)	8210 ± 280 (WAT-727)	McAndrews, unpublished
41.	Charles Lake	10,500-0	-	-	Bailey 1969
42.	Sawlog Bay	6500-5500	6220 ± 220 (I-7741)	-	McAndrews, unpublished
43.	Townline Lake	13,000-0	12,800 ± 230 (GSC-1096)	-	T. Anderson 1971
44.	Louise Lake	13,000-0	13,900 ± 210 (GSC-1151)	-	T. Anderson 1971
45.	Wylde Lake Bog	13,000-0	10,800 ± 180 (GSC-1028)	-	T. Anderson 1971
46.	Edward Lake	12,000-0	10,550	5020	McAndrews 1981
47.	Marl Lake	7500-0	6840 ± 220 (BGS-220)	-	Terasmae 1979

Table 2.1: continued.

MAP No.*	SITE NAME	INFERRED TIME INTERVAL (YEARS B.P.)	OLDEST C-14 DATE (YEARS B.P.)	YOUNGEST C-14 DATE (YEARS B.P.)	SOURCE
48.	Second Lake	11,000-0	4975 ± 210 (I-9429)	-	McAndrews, unpublished
49.	Pitcher Bog	4,000-0	3485 ± 230 (I-9502)	-	McAndrews, unpublished
50.	Wales	11,000-10,000	10,280 ± 200 (WAT-493)	-	W.D. Fitzgerald 1985
51.	Minesing Swamp	11,000-5500	6170 ± 140 (Wat-507)	-	W.D. Fitzgerald 1985
52.	Rose Swamp	11,000-0	10,070 ± 280 (WAT-1016)	7160 ± 100 (WAT-1017)	Dibb 1985
53.	Keswick Bog	3900-0	3900 ± 100 (UQ-623)	2470 ± 145 (UQ-621)	Dinel et al. 1986
54.	Victoria Road Bog	9600-0	9600 ± 190 (GSC-132)	-	Terasmae 1968
55.	Van Nostrand Lake	11,000-0	9750 ± 270 (I-5786)	5710 ± 135 (I-5785)	McAndrews 1973
56.	Humber River Valley	4000-0	3380 ± 120 (TO-835)	150 ± 50 (TO-248)	Weninger and McAndrews 1989
57.	Grenadier Pond	4500-0	4230 ± 120 (WAT-1332)	1070 ± 100 (TO-248)	McCarthy and McAndrews 1988
58.	Brampton Esker	13,000-12,500	12,320 ± 720 (BGS-551)	11,790 ± 150 (BGS-550)	Terasmae and Matthews 1980
59.	Ballycroy Bog	11,000-0	10,900 ± 200 (GSC-1143)	4220 ± 130 (GSC-1146)	T. Anderson 1971
60.	Cookstown Bog	11,000-7000	10,200 ± 150 (GSC-1111)	-	T. Anderson 1971
61.	Rice Lake	8500-0	10,350 ± 470 (GX-5293)	1320 ± 280 (GX-5290)	McAndrews 1984
62.	Barry Lake	9500-0	9470 ± 210 (I-9501)	-	McAndrews, 1984
63.	Cranberry Bog	10,000-0	-	-	McAndrews, unpublished
64.	Ross Lake	12,000-0	11,350 ± 260 (GSC-625)	-	Terasmae 1980
65.	Oak Lake	12,000-0	-	-	McAndrews, unpublished
66.	Roblin Lake	10,700-0	10,700 ± 160 (GSC-890)	2120 ± 140 (GSC-379)	Terasmae 1980
67.	Inglesby Lake	10,300-0	10,300 ± 195 (WAT-1097)	9170 ± 120 (WAT-120)	Fritz et al. 1987
68.	Harrowsmith Bog	10,500-0	10,390 ± 160 (GSC-270)	-	Terasmae 1968
69.	Green Lake	11,000-0	10,540 ± 260 (WAT-1105)	5670 ± 160 (WAT-1599)	Warner, unpublished
70.	Little Round Lake	11,200-7600	11,180 ± 180 (GSC-649)	-	Terasmae 1980

Table 2.1: continued.

MAP No.*	SITE NAME	INFERRED TIME INTERVAL (YEARS B.P.)	OLDEST C-14 DATE (YEARS B.P.)	YOUNGEST C-14 DATE (YEARS B.P.)	SOURCE
71.	Waterton Bog	11,000-0	10,500 ± 140	9900 ± 100 (GSC-3127)	T. Anderson 1987
72.	Lamb's Pond	12,300-0	12,300 ± 230 (GSC-3088)	8320 ± 120 (GSC-3296)	T. Anderson 1987
73.	Atkins Lake	11,100-0	11,100 ± 270 (GSC-762)	1020 ± 160 (GSC-807)	Terasmae 1980
74.	Mer Bleue Bog	7700-0	7650 ± 210 (GSC-681)	-	Mott and Camfield 1969
75.	Dows Lake Bog	10,000-0	-	-	Mott and Camfield 1969
76.	Site 3	8800-0	8830 ± 190 (GSC-546)	-	Mott and Camfield 1969
77.	Site 4	-	7780 ± 160 (GSC-628)	7590 ± 140 (GSC-628)	Mott and Camfield 1969
78.	McKay Lake	8100-0	8140 (GSC-4069)	4820 (GSC-4087)	T. Anderson 1987

*:refers to location on Figure 2.13.

Interstade. Shrubs and herbs probably were present first, followed by spruce. The time between deglaciation by Port Bruce ice and until about 10,500 years B.P., an interval of about 4,000 years, was a period of rapid environmental change in southwestern Ontario brought about by competing ice-lobe positions, fluctuating proglacial lakes, and presumably rapid biotic colonization. Little is known of the vegetation during Port Bruce time, apart from some pollen-bearing silt deposits (Sigleo and Karrow 1977), the paleoenvironmental significance of which is difficult to assess.

Whether conditions were suitable for plants to persist during Port Bruce time remains an open question. However, almost certainly, any small patch of land that remained unaffected by ice, water, or wind could have supported some plants.

Some evidence of early plant communities during Late Wisconsinan time in southern Ontario includes macroscopic remains of Mackinaw Interstadial age. Warner and Barnett (1986) suggested that open dwarf shrub meadows and fellfield with plants such as mountain avens, herbaceous willow, lacerated dandelion, and mouse-eared chickweed lived in the centre of polygons, on periglacial ground, and in areas marginal to the glacier. Open spruce forest and perhaps closed forest lived farther away beyond the periglacial influence of the ice. Minerotrophic wetlands and other poorly drained sites supported boreal and temperate plants such as tamarack, red osier dogwood, brambleberry, and bog buckbean. Rapidly wasting glaciers, their meltwaters, proglacial lakes, and innumerable ponds maintained habitats suitable for diverse submerged and floating-leaved aquatic communities. Most of these sites probably had mineral substrates, but some had organic substrates. Alpine pondweed, narrow-leaved pondweed, water naiad, whorled water-milfoil, water shield, and stonewort were common elements.

Some of the smallest kettles, some valley bottomlands, and abandoned drainage channels which evolved into and today support a suite of wetland types, began, during or late in Mackinaw time, to collect organic-rich silt, marl, or silty gyttja. One example is the Gage Street site in Kitchener (Schwert et al. 1985).

TABLE 2.2: English and Latin Names of Plants Referred to in this paper.

CONIFEROUS TREES:	
white spruce	*Picea glauca*
black spruce	*Picea mariana*
jack pine	*Pinus banksiana*
red pine	*Pinus resinosa*
white pine	*Pinus strobus*
eastern white cedar	*Thuja occidentalis*
balsam fir	*Abies balsamea*
eastern hemlock	*Tsuga canadensis*
larch, tamarack	*Larix laricina*
DECIDUOUS TREES AND SHRUBS:	
trembling aspen	*Populus tremuloides*
balsam poplar	*Populus balsamifera*
paper, white birch	*Betula papyrifera*
yellow birch	*Betula alleghaniensis*
sugar maple	*Acer saccharum*
American elm	*Ulmus americana*
black ash	*Fraxinus nigra*
ironwood	*Ostrya virginiana*
blue beech	*Carpinus caroliniana*
American beech	*Fagus grandifolia*
sycamore, plane tree	*Platanus occidentalis*
bitternut hickory	*Carya cordiformis*
basswood	*Tilia americana*
butternut, white walnut	*Juglans cinerea*
chestnut	*Castanea dentata*
red osier dogwood	*Cornus stolonifera*
herbaceous willow	*Salix herbacea*
buffalo berry	*Shepherdia canadensis*
silver berry	*Elaeagnus commutata*
bramble berry	*Rubus* sp.
mountain avens	*Dryas integrifolia*
ALGAE AND HERBACEOUS PLANTS	
stonewort	Characeae
horned pondweed	*Zannichelia palustris*
alpine pondweed	*Potamogeton alpinus*
narrow-leaved pondweed	*Potamogeton filiformis*
comb-like pondweed	*Potamogeton pectinatus*
whorled water-milfoil	*Myriophyllum verticillatum*
water naiad	*Najas flexilis*
water shield	*Brasenia schreberi*
bog buckbean	*Menyanthes trifoliata*
lacerated dandelion	*Taraxacum lacerum*
mouse-eared chickweed	*Cerastium* sp.
ragweed	*Ambrosia* sp.
plantain	*Plantago* sp.
dock	*Rumex* sp.

TABLE 2.2: Continued.

corn	*Zea mays*
tobacco	*Nicotiana tabacum/rustica*

By 13,000 to 12,500 years B.P., closed spruce forests were well-established in southwestern Ontario. Both closed and open spruce forests with black and white spruce characterized the vegetation. The best evidence comes from trash layers buried in kettles. White spruce fossils from a kettle near Brampton have been dated 12,320 ± 160 (BGS-551; Terasmae and Matthews 1980), and 11,900 ± 140 (GSC-4371) and 12,000 ± 90 (WAT-1685) from another kettle in Kitchener (Karrow and Warner 1988). Stranded and melting ice blocks were a common feature of the landscape during this period. Though macrofossils confirm the presence of spruce on "Ontario Island" much earlier, the apparent delay in its expansion until about 12,500 years B.P. may be due to: (a) creation of new land bridges across the Erie basin which facilitated migration from southern refugia and a major expansion into Ontario, (b) edaphic and microtopographic maturation suitable to maintain spruce populations, (c) changing local lake- or ice-effect climates, or (d) a global or continent-wide climatic change. Coarse-textured and well-drained soils, such as on the main morainic belts around London, Kitchener-Waterloo, and Orangeville, probably supported less spruce and more open poplar and birch forests. Shrub and herbaceous elements that characterized earlier vegetation communities could have persisted in these areas. Similar communities likely grew along glacial lake beaches, abandoned and active ones. Isopoll maps indicate that the general northern wave of spruce migration into southwestern Ontario, was northwards then eastwards and north into the Ottawa region (Jacobson et al. 1987).

Numerous lagoons and back-water sloughs existed around the shores of Lake Algonquin during this time. Fossil pollen reflects the regional spruce forests of the time, while both pollen and plant macrofossils provide a clear impression of beach and dune communities, and local wetland vegetation (T. Anderson 1971, 1979; Karrow et al. 1975). Poplar and birch trees were present along the lake shore, but more important were shrubs such as buffalo berry and silver berry. Both shrubs are well known for their nitrogen-fixing abilities in pioneering habitats, in sandy, gravelly, or rocky soils and on bare limestone bedrock (Soper and Heimberger 1982). Elephants were common in Ontario at this time. It is thought that mastodons browsed on forest vegetation around wetlands on abandoned lake plains and mammoths grazed in grasslands on uplands and glacial lake shores (McAndrews and Jackson 1988).

By contrast in eastern Ontario, open herbaceous and dwarf shrub communities probably moved northwards from New England to areas around the Champlain Sea, and subsequently westwards between Early Lake Ontario to the south and the ice front to the north. Open spruce forests were present on the west end of Early Lake Ontario, while poplar was more common along the eastern end of the basin. Poplar and open mixed spruce-poplar forests developed shortly thereafter on the uplands to the south of and immediately surrounding the Champlain Sea (Mott 1978; T. Anderson 1987).

Spruce forests were present first in southwestern Ontario and gradually extended eastwards. Spruce infiltrated the poplar forests and did not reach the Ottawa-St. Lawrence valleys until about 11,000 years B.P. south and southeast of the Champlain Sea, and at around 10,200 years B.P., farther north (T. Anderson 1987). This represents a time span of at least 2000 years for spruce forests to spread across southern Ontario. By the time spruce forests developed in eastern Ontario, pine forests had already replaced pre-existing spruce forests in southwestern Ontario.

Holocene Environments

The modern vegetation in Ontario is organized in a simple series of latitudinal belts ranging from forests and barrenland in the north, through coniferous forest, mixed coniferous-deciduous forests, and deciduous forests in the south. This pattern of inferred forest development is repeated from oldest to youngest in the Holocene pollen record of southwestern Ontario. Spruce forests give way to pine forests with some deciduous species, through early modern counterparts of the mixed coniferous-deciduous forests with hemlock, and eventually to deciduous forest (McAndrews 1981).

Southern Ontario can be divided into three main areas on the basis of their different Holocene pollen records. The first area comprises much of southwestern Ontario, west of about 77°W longitude and south of Georgian Bay; the second area is Manitoulin Island and the Bruce Peninsula; and the third area is the Ottawa-St. Lawrence Lowlands east of about 77°W longitude. Differences in vegetation between southwestern and southeastern Ontario, both today and historically extending back throughout most of Holocene time, suggests differences in resources available to Native groups. Such differences would extend to contrasting environmental adaptions between the two regions. Although archaeological data are nowhere near complete to confirm this, there is some suggestion of differing cultural adaptations as far back as about 10,000 years B.P. (see Ellis and Deller: this volume; Ellis et al.: this volume).

Southwestern Ontario

The most detailed, and perhaps the most representative pollen profile published from southwestern Ontario is from Maplehurst Lake (Mott and Farley-Gill 1978). Other important works include: Terasmae (1968), T. Anderson (1971), McAndrews (1981), Karrow et al. (1975), Schwert et al. (1985), Bennett (1987), Karrow (1987b), McAndrews et al., (1987), and Warner and Kubiw (1988) (Figure 2.14).

By the beginning of Holocene time, the pollen records reflect the movement of tree species into southwestern Ontario from their earlier positions south and west of the central Great Lakes region (Jacobson et al. 1987). Pine begins to dominate pollen records by around 10,600 years B.P., the generally accepted average age in southwestern Ontario. Drainage of Main Lake Algonquin in the Huron Basin and isostatic uplift which gave rise to a major transgression in the Ontario basin seem to have triggered a series of environmental changes, and in turn vegetational changes in southwestern Ontario, the most pronounced of which were felt closer to the lakes than farther inland.

An open jack/red pine forest probably dominated the uplands where soils were particularly poorly developed and infertile, and where drainage was good. Given that jack and red pine prefer similar soil conditions, these trees probably favoured the numerous morainic ridges, the sandier till plains, and the newly emerging well-drained sandy lake beds. Macrofossils of red and white pine begin to appear at about 8900 years B.P. at Kitchener, thereby confirming their local presence (Schwert et al. 1985). In more open areas, species of poplar, birch, and oak would have formed either pure or mixed stands much like they do today in the mixed coniferous-deciduous forests of southern Ontario (Maycock and Curtis 1960).

Eastern white cedar, tamarack, black spruce, and perhaps some balsam fir occupied lowland sites in situations with excessive soil moisture and mineral-rich waters (Schwert et al. 1985). Ice blocks in kettles had melted by this time, particularly on the main morainic belts in the centre of the region. Other non-kettle lakes situated in spillway channels had long become independent water bodies.

By about 9000 years B.P., white pine infiltrated pre-existing jack/red pine stands, and became the forest dominant. New deciduous species such as elm and ash joined the forests also. White pine grows on various soil types, most commonly on well-drained sand, but also on loams and silts with impeded drainage and where competition is minimal (Maycock and Curtis 1960; Fowells 1965). The reduced extent of lakes in the Huron and Georgian Bay basins and widespread distribution of sandy lake plain deposits, in some places well-drained and in other places poorly drained, provided new areas for colonization by white pine. The increases in elm and ash (most likely black ash) pollen probably suggests the presence of these trees in lowland swamp forests (Bennett 1987).

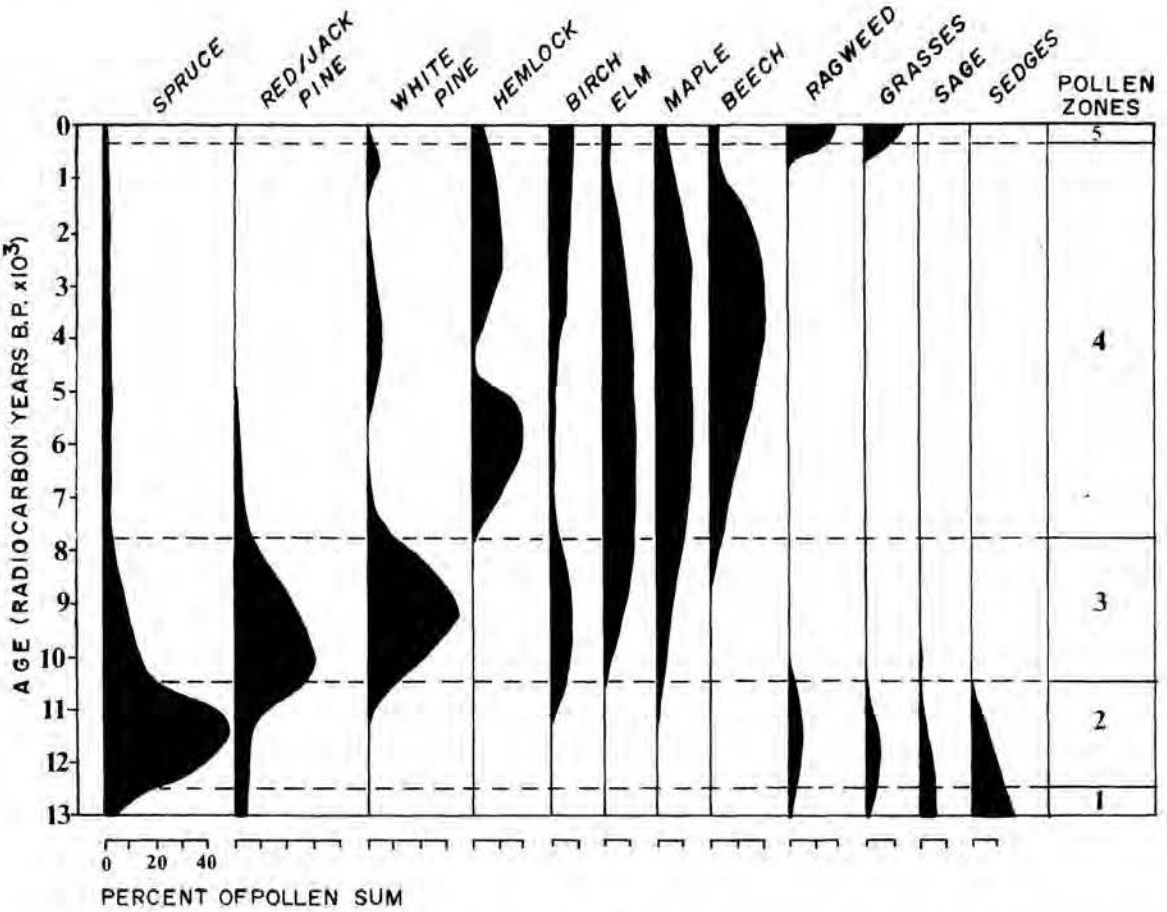

FIGURE 2.14: Generalized Representative Pollen Diagram for Southwestern Ontario. Based on sites listed on Table 2.1.

Much of the remainder of Holocene vegetational history is a record of changing tree populations as new arrivals competed with earlier arrivals (Bennett 1987). The next significant change in the forests is signalled by the spread of hemlock between 7500 to 8000 years B.P. (Mott and Farley-Gill 1978; McAndrews 1981; Bennett 1987). Bennett (1987) notes that the pollen record of hemlock is quite variable from level to level at some sites, most notably however at around 5000 years B.P., throughout the whole of its range. The conventional interpretation for the decline in hemlock pollen frequencies is decimation of the trees by a pathogen (Webb 1982; Allison et al. 1986). The irregularity in pollen frequencies suggests that hemlock stands were subjected to repeated attacks at some sites (Bennett 1987).

Oak, elm, maple (most likely sugar maple), ash, and ironwood/blue beech (most likely ironwood) gradually increased their representation in the regional forests of southwestern Ontario (Mott and Farley-Gill 1978; McAndrews 1981; Bennett 1987). Many of these deciduous trees are nut-bearing species. Thus, the nuts offered an important additional or alternative source of food for Native peoples than were available earlier. These trees probably assumed a dominant position on dry to moderately moist sites with more fertile soils (Maycock and Curtis 1960; Maycock 1963). Somewhat later, after about 6500 years B.P., and especially after the hemlock decline, beech became abundant (Bennett 1985, 1987). Today, beech is co-dominant with sugar maple on dry to moderately moist to wet sites (Maycock 1963), and farther north it prefers dry to moderately wet soils in the mixed coniferous-deciduous forest zone (Maycock and Curtis 1960). By about 7500 years B.P., other typical deciduous species such as hickory, basswood, and walnut began to assume their positions in the deciduous forests.

The Middle to Late Holocene forests in southwestern Ontario remained relatively stable, with the possible exception of the more recent arrival of chestnut (Davis 1981). Water level changes in the Great Lakes associated with the Nipissing phase seem to have had little impact on regional forests. However, uplift caused streams and rivers to back up drainage which promoted peatland development (e.g. Dinel et al. 1986), and changed water levels in local lakes and ponds (Terasmae 1979; McCarthy and McAndrews 1988; Weninger and McAndrews 1989).

The next major trends in forest history reflect clearance and disturbance, first by Indian farmers around the fourteenth century, and later by European farmers and loggers around 1820 A.D. (Boyko 1973; McAndrews 1976; Burden et al. 1986; McAndrews and Boyko - Diakanow 1988). The use of agriculture by Native peoples is inferred by localized increases in herbs and grasses and recovery of Indian corn pollen at some pollen study sites indicative of more open areas cleared for crop planting (McAndrews and Boyko-Diakanow 1988). Deforestation and agriculture by Europeans is inferred by the decline in tree pollen types and increases in pine and herb pollen, especially ragweed. The introduction of European weed pollen such as plantain and dock, and modern agricultural types such as corn and tobacco is apparent in pollen diagrams representing this period (Warner unpublished). Deforestation seems to have given rise to increased surface runoff into some kettle basins, which promoted *Sphagnum* bog development (Warner and Kubiw 1988; Warner et al. 1989).

Manitoulin Island and the Bruce Peninsula

The Holocene pollen record on Manitoulin Island and the Bruce Peninsula differs somewhat from that in southwestern Ontario though the general pattern is similar (Warner et al. 1984; Warner unpublished; Figure 2.15). From the time of deglaciation, and lasting throughout the time of Main Lake Algonquin, the small proto-Manitoulin Island supported open herbaceous meadows and spruce woodland. As water levels gradually dropped in the Huron and Georgian Bay basins with the opening of the outlet at North Bay, vegetation communities changed to a jack/red pine woodland -- a change which probably occurred at around 10,500 and certainly before 10,000 years B.P. As white pine was beginning to achieve its dominance in the forests on the mainland during the low water phase of Lake Stanley and Lake Hough, spruce regained dominance in the forests on Manitoulin Island. Radiocarbon dates reported by Warner et al. (1984) and a new one are 9900 ± 90 (WAT-579) for the lower boundary and 8580 ± 150 (WAT-1368) for the upper boundary of this later spruce period. After this time, white pine reached Manitoulin Island, macrofossils of which confirm its local presence. Thus, Manitoulin Island, and possibly the Bruce Peninsula, are unusual, in that fluctuating lake levels directly affected forest composition.

White pine was joined by the characteristic deciduous species comparable to trends in southwestern Ontario, though the pollen record indicates only a weak and sporadic presence in the local forests. Manitoulin Island for the most part is barren limestone pavement which does not provide the preferred soil conditions for their development, and hence the island does not and appears never to have supported a rich deciduous forest element. In some cases, the isolated geographic position of the island may have imposed a dispersal barrier. Instead, the lush herbaceous meadows and open scrubland for which Manitoulin Island is so well known, seems to have been present ever since emergence of the island from Main Lake Algonquin waters.

Pollen profiles from Shouldice Lake and Charles Lake on the Bruce Peninsula show a similar double peak in spruce pollen (R. Bailey 1969; McAndrews unpublished) which might correspond with the Manitoulin Island records. However, more detailed work and dating is needed to establish precise correlation of their vegetation histories.

Southeastern Ontario

The general history of forest development in southeastern Ontario is similar to that in the southwestern part of the province with the exception of fewer and poorer presence of certain deciduous elements and in the timing of vegetational changes. Spruce forests were still dominant throughout the entire western basin of the Champlain Sea and surrounding uplands from Lake Ontario to the southern Laurentians up to about 10,000 years B.P. (T. Anderson 1987), lasting for nearly 1000 years longer than farther west before jack/red pine crossed into eastern Ontario to

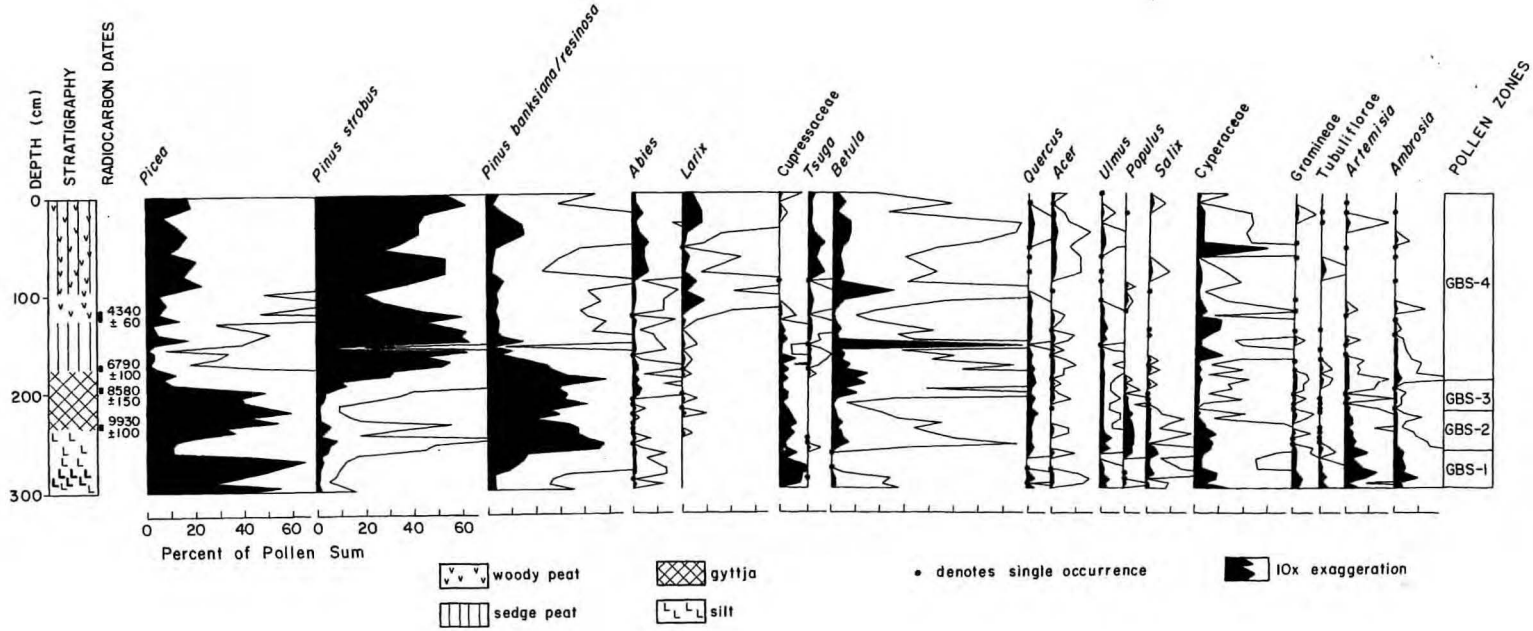

FIGURE 2.15: Abbreviated Pollen Diagram from Greenbush Swamp, Manitoulin Island. Adapted from Warner et al. (1984).

replace spruce in regional forests. This phase in forest development was brief, as white pine became the forest dominant by 8000 to 7500 years B.P. throughout eastern Ontario.

The well-known calcareous concretions at Green Creek, on the Ottawa River contain plant and animal remains which indicate former presence of gravel and sand beaches and freshwater feeder streams, and brackish estuaries near the close of the Champlain Sea episode (Harington 1983; Warner 1986). The best available date for the age of the nodules is 9960 ± 820 years B.P. (GSC-2498) on a willow twig (Gadd 1980b). Leaves of balsam poplar and trembling aspen indicate open woodlands. Seeds of aquatic macrophytes (including horned pondweed and comb-like pondweed) probably grew in streams and estuaries (Warner unpublished).

A west-east transect of pollen diagrams reveals a sequential rise in pollen and presumably the eastward and the northward spread of hemlock, and characteristic deciduous associates. Hemlock increases by about 7600 years B.P. at Roblin Lake, and around 6400 years B.P. in the Ottawa Valley (Terasmae 1980; T. Anderson 1987). Forest development throughout much of the Middle and Late Holocene in eastern Ontario is similar in some respects to that of southwestern Ontario. For example, a synchronous decline in hemlock is apparent in pollen diagrams across southern Ontario. However, spruces of the mixed coniferous-deciduous forest association, and in particular coniferous elements, are more characteristic in the southeastern segment of the province, largely because soils are poorer, more acidic, developed on bare bedrock, and are sandy and clayey as a result of the former presence of the Champlain Sea. Consequently, there are fewer food-producing deciduous trees to provide a source for human subsistence.

Holocene Climatic History

Recent papers have emphasized the complexities of the pollen record, and the various ways in which vegetation may respond to climatic change (J. Ritchie 1986; Webb 1986; Delcourt and Delcourt 1987). Probably as a consequence of such complexities, attempts to reconstruct quantitatively the magnitude of vegetational response in terms of climate in southern Ontario, are few (McAndrews 1981). We have reconstructed the history of climatic change in more qualitative terms based on the traditional interpretation of the pollen record in southern Ontario in order to suit the purposes of this paper (Figure 2.16). Recent paleoclimatic interpretations based on isotopic composition of plant cellulose and the pollen record for the last 12,000 years in southwestern Ontario show some interesting general parallels (Edwards and Fritz 1986, 1988). As suggested by Warner et al. (1984) based on pollen data, summers became warmer and perhaps longer than today by 10,000 B.P. Certainly closest to the Great Lakes, winter temperatures need not have changed necessarily, apart from undergoing a gradual and constant amelioration. Superimposed on temperature trends is atmospheric humidity. Early Holocene time is characterized by an initial period with perhaps warm and dry conditions, followed by continued warm temperatures and a change to more humid conditions (Warner et al. 1984). The isotope studies support this interpretation except that there is a 1000 to 2000 year delay in inferred climatic responses based on the isotope data in comparison with the pollen data (Edwards and Fritz 1986,1988). A number of hypotheses could be advanced to account for this discrepancy, but space does not permit a detailed discussion here.

Between the time of deglaciation for the last time to about 12,500 years B.P., the overall paleogeographic setting of an ice- and lake-dominated landscape, essentially treeless or with only sparse forests, and the mixture of phytogeographic elements from the western Cordillera, Prairies, and Arctic, together imply extreme continentality, with cold winters, and cool summers (Karrow and Warner 1988). Atmospheric humidity was low, and summer rains and winter snowfall were infrequent. This combination, probably gave rise to year-round droughts. Xeric soils characterized the edaphicly and successionally immature morainic belts and till plains. Submerged and possibly some emergent aquatic vascular plants, which were not particularly sensitive to seasonal and diurnal atmospheric temperature and humidity fluctuations, characterized proglacial lakes and meltwater streams, and other waterbodies in the lowlands.

For about the next 2000 years, with the dominance of spruce forests, atmospheric humidity probably increased available moisture, which provided more winter snow and a thermal blanket to protect tree seedlings and

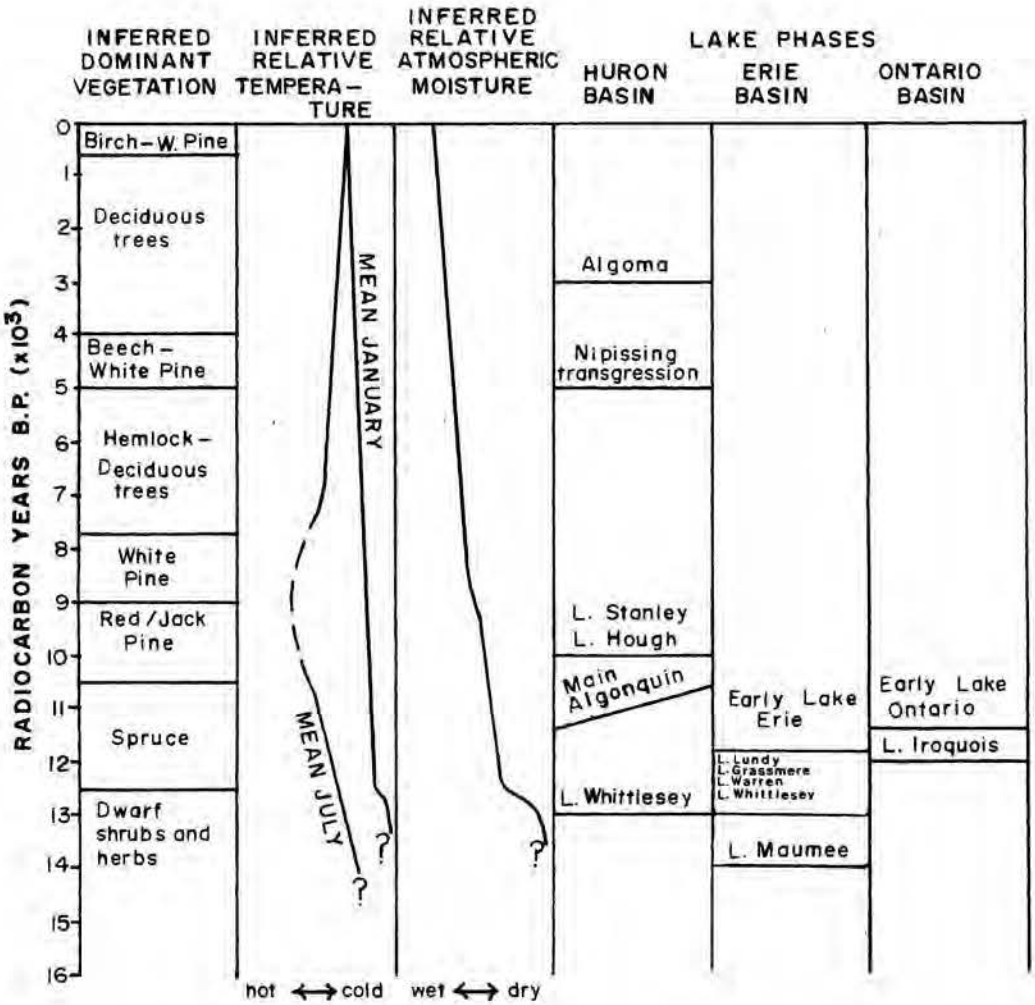

FIGURE 2.16: Summary Diagram Illustrating the Inferred Dominant Vegetation, Traditional Interpretations of Relative Temperature and Relative Atmospheric Moisture, and Associated Lake Phases for the last 14,000 Years in Southern Ontario.

other more "boreal-type" plants from the extreme winter cold. As discussed previously, the rise to dominance of spruce may not signal a climatic change as much as a migrational wave facilitated by availability of land bridges.

Atmospheric moisture and winter temperatures continued to gradually increase. The rise of jack/red pine implies that summers became quite warm and remained so for at least 1500 years or so between about 10,500 to 9000 years B.P. Summer warmth was accentuated by atmospheric humidities lower than today, which contributed to mean July temperatures perhaps warmer than modern conditions in southwestern Ontario.

In contrast to jack/red pine which can be regarded as both edaphicly and climatically xeric indicators, white pine prefers edaphically and hence climatically, more humid conditions. The climate during the white pine period then was one of comparatively higher humidities and continued hot summers.

The rise to dominance of hemlock and associated deciduous elements which grow together in the modern mixed coniferous-deciduous forests, signal a different climatic regime: one of higher atmospheric humidity, and a decline in July temperature towards cooler conditions.

It is beyond the scope of this paper to speculate on the causes for these inferred climatic trends, but it is an interplay of movements of continental cyclonic weather systems, fluctuating Great Lakes levels and associated climatic influences, and site-specific microclimatic regimes. Further work is desperately needed to differentiate each of these factors in the paleoclimatic record of southern Ontario. Having done so, then we will have a more accurate understanding of past environments which confronted the early peoples of this part of Canada.

Acknowledgments:

We are indebted to the innumerable geologists and paleoecologists who have contributed over the years to our knowledge of Late Quaternary events in southern Ontario, for without their efforts this review would not have been possible. We appreciate discussions with Dr. J.H. McAndrews and his generosity in allowing access to unpublished data, though we assume full responsibility for our interpretations of the data. We thank H.J. Kubiw for technical assistance, and N. Bahar for preparing figures. Our own on-going research has been or is being funded by the Ontario Geological Survey and the Natural Sciences and Engineering Research Council of Canada.

CHAPTER 3

PALEO-INDIANS

Chris J. Ellis & D. Brian Deller

The term "Paleo-Indian" or literally, "old" or "ancient" Indians, was first coined by F.H.H. Roberts in 1940. At that time, it was used in a general sense to refer to all of those known assemblages which appeared to be of some antiquity and represented the earliest occupants of North America. Since the 1940's, use of the term has become widespread and has acquired more specialized usages despite the fact that there is no unanimity among researchers on how it should be specifically applied. For the most part, modern researchers use the term in one or more of three ways.

First, it is used by most to refer to the earliest *well-documented* groups in the Americas beginning around 11,500 years B.P. There are suggestions of earlier occupants in the New World but this evidence is hotly debated (see, for example, Bryan 1986; Dincauze 1984; Shutler 1983).[1]

A second way in which the term Paleo-Indian is defined is by the characteristics of sites and artifact assemblages. In particular, certain distinctive, stone artifact forms have been emphasized as diagnostic of these groups. In addition, a focus on specific kinds of stone materials for tool manufacture and the great similarity or homogeneity of artifact forms over almost all the unglaciated regions of North America have been stressed as defining characteristics. These and other characteristics will be discussed in more detail in subsequent sections.

Finally, to many, Paleo-Indians are distinguished not only by the age of the occupations and the artifact assemblages but also, by a particular lifestyle or way of exploiting and subsisting in the environments of late glacial times. Indeed, most archaeologists would agree that the distinctive characteristics of Paleo-Indian sites and assemblages, and the contrasts evident with later groups, are probably due to some extent to differences in lifeways. However, there are major disagreements on exactly what these lifeways entailed.

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[1] These possibly earlier occupants are referred to usually as "Pre-Clovis" or "Pre-Projectile point" groups. One of the best candidates for these earlier occupations in the Great Lakes area is the Meadowcroft Rockshelter in southwestern Pennsylvania where evidence of human occupation back to ca. 20,000 years ago is claimed (e.g. Adovasio et al. 1975, 1980, 1983). This evidence is not universally accepted (e.g. Dincauze 1981, 1984; Kelly 1987; Haynes 1980b; Mead 1980). Regardless, even if these claims are eventually accepted, it is highly unlikely "Pre-Clovis" occupations comparable to those posited for Meadowcroft occurred in southern Ontario. For one thing, the area was largely unavailable for human occupation from ca. 25,000 to 12,000 to 11,500 B.P. due to the ice or large glacial lake cover (see Karrow and Warner: this volume). As well, the highly restricted areas which were available for habitation during that time period were characterized by very impoverished environments. In short, the food resources available to attract and sustain human occupation were extremely limited. Of course, this does not rule out the possibility of occupations prior to ca. 25,000 B.P. and one site, Sheguiandah on Manitoulin Island, has been put forward as evidence of such occupations (R. Lee 1986; T. Lee 1954, 1955, 1957). However, this evidence has not been widely accepted or put more accurately, the nature of the available data does not allow the claims to be properly and rigorously evaluated (Julig 1985; Karrow 1987c).

By definition, Paleo-Indians were non-agriculturalists or hunter-gatherers who depended on "naturally" available foodstuffs such as game or wild plants. A popular interpretation is that Paleo-Indians throughout North America were small, mobile groups who focused largely on the hunting of game rather than the collecting of plant food. In particular, the communal hunting of larger, now totally or regionally extinct late glacial fauna such as gregarious herbivores has been stressed. This idea emerged from the work on the earliest well-documented finds of these peoples on the High Plains of western North America. These finds consisted almost entirely of communal kill sites of large mammals such as giant extinct bison forms and in some cases, the elephant-like mammoths and mastodons (see Frison 1978 and Wormington 1957 for summaries). This model was later extended to other areas of North America. A similar lifeway was suggested to have been practised in these other areas largely because of the similar artifact forms produced. For example, communal hunting of caribou has been emphasized in reconstructions of Paleo-Indian economic orientations in northeastern North America even though there is a paucity of well-documented faunal remains in association with these sites.

However, this traditional interpretation has been questioned in more recent years in light of more accurate reconstructions of late glacial environments, the development of more sophisticated theoretical frameworks to interpret archaeological assemblages and an increasing knowledge of the factors underlying hunter-gatherer lifestyles made possible by numerous studies of still extant hunter-gatherer groups (e.g. Curran 1984, 1987; Meltzer 1984, 1985). It seems certain that Paleo-Indian groups in specific areas carried out communal hunting activities and that the nature of the environments in some areas such as the Northeast provided little in the way of plant foods suitable for intensive exploitation. However, it now seems evident that a focus on large game hunting or communal hunting was impossible in many areas known to have been inhabited by Paleo-Indians such as many areas of the southeastern United States (Meltzer 1984). Thus, despite the homogeneity or similarity of Paleo-Indian tool forms over large, spatial areas, this does not mean that they solely or universally practiced a lifestyle heavily oriented towards hunting. Indeed, the traditional subsistence model is generally based on the assumption that the tool kits of hunter-gatherers are simply a product of the activities or tasks in which they were used -- in this case, hunting activities. It is becoming increasingly clear that tool assemblages are not solely or even largely simply the product of the tasks in which they were used. They are also a complex product of several other interrelated factors including the degree of need for portability in the tool kit (Goodyear 1979; Shott 1986), the time available to carry out tasks (Binford 1979; Torrence 1983) and the role of artifacts in non-utilitarian contexts such as social interaction (Weissner 1982, 1983).

Therefore, it is no simple or easy task to go from artifact assemblages to interpretations of lifeways in archaeology. We will suggest below that Paleo-Indians in southern Ontario and the Great Lakes region in general fit the long-held stereotype of Paleo-Indians as hunters and particularly, communal hunters, more closely than in most other areas of North America. However, we make no claim that this is always the case and that this is a lifeway which always can be used to define Paleo-Indian groups. Rather, as used herein, the term Paleo-Indian will be employed solely to refer to the earliest well-documented groups in the New World who produced certain distinctive kinds of sites and artifact assemblages.

This definition, although more limited than one based on inferences as to lifeways, also has its problems. In particular, distinguishing on this basis Paleo-Indian from subsequent Archaic assemblages is difficult and a number of schemes have been used by various investigators. For the purposes of this paper we have somewhat arbitrarily distinguished Paleo-Indian from Archaic assemblages based on differences in the point styles with which these groups tipped their hunting weapons. Specifically, Paleo-Indian assemblages will be delineated by the occurrence of lance-shaped points lacking the notches or *marked* stemming for hafting purposes which characterizes most Archaic point forms. The rationale behind this somewhat arbitrary distinction is discussed more fully in the next chapter (Ellis, Kenyon and Spence: this volume).

Early Paleo-Indian

Background

The earliest Paleo-Indian groups throughout North America produced assemblages including distinctive spear or dart points. A major distinguishing criteria of these points is the presence of channels or grooves or "flutes" originating at the base on one and usually both faces (Figures 3.1 and 3.2). Groups who produced this form of artifact are referred to as "Early Paleo-Indians" (hereafter, EPI). Several, often fanciful explanations for fluting have been proposed (see Wormington 1957:29) but most now regard this characteristic as one which facilitated hafting of the point to the shaft. However, it is much debated why fluting rather than some other hafting mechanism such as notching was employed (for some possible explanations see: Frison and Stanford 1982:211; Judge 1973:147-178; Wilmsen 1974:52-53).

Since the initial discoveries of fluted points in association with extinct bison species at Folsom New Mexico in the 1920's, these highly distinctive forms have been found throughout most of unglaciated North America from Alaska south to Mexico and from the Pacific to Atlantic coasts. Many have concluded that the makers of these points were the first colonizers of the New World based on the widespread distribution of these points and other distinctive items in the tool kit.

Less than 15 years ago we knew very little about the EPI occupants of Ontario. Isolated finds of fluted points had indicated by the 1930's that such groups inhabited the area (Figgins 1934; Kidd 1951). In fact, a fluted point had been illustrated as long ago as 1906 (Boyle 1906:11) even though its age and significance was not realized. However, it was not until the 1970's that actual sites were located and begun to be examined in any detail. The first major contribution was Charles Garrad's (1971) updated synthesis of the known distribution of fluted points in Ontario. This was followed by several projects specifically designed to locate and investigate Early Paleo-Indian sites (see Deller 1976a, 1976b, 1979, 1980a, 1980b, 1988; Deller and Ellis 1984, 1986, 1988; Ellis 1979a, 1984; Jackson 1978, 1983a, 1983b, 1986a; Prideaux 1977, 1978; A. Roberts 1984, 1985; Roosa 1977a, 1977b, 1980; Roosa and Deller 1982; A. Stewart 1984; Storck 1978a, 1979, 1982, 1983, 1984a, 1984b, 1988; Storck and von Bitter 1981). As a result, a large number of sites as well as isolated surface finds are now known in Ontario (Figure 3.3; Table 3.1). As well, research has continued apace in the surrounding areas of the United States (e.g. Gramly and Lothrop 1984; Gramly and Summers 1986; Payne 1982a; Roosa 1963, 1965; Shott 1986; Simons et al 1984; Voss 1977; H. Wright and Roosa 1966). In Ontario alone, over a dozen of the known sites have seen some degree of excavation (Table 3.1).

Age

Radiocarbon dates are presently not available for EPI sites in the Great Lakes area, but chronological estimates can be made based on geological considerations and comparisons to securely dated materials elsewhere. The earliest known fluted points are the Clovis forms which date to between 11,500 and 11,000 years B.P. in western North America (Haynes 1980a; Haynes et al. 1984). C-14 dates on the later Folsom fluted points in the West suggest they fell out of use in that area between ca. 10,500 and 10,200 B.P. to be replaced by unfluted forms.

In areas to the east of the Great Lakes, almost all dates suggest EPI groups occupied the area from ca. 11,000 B.P. to just after 10,500 B.P. Since the dates are earlier in the West, it is reasonable to infer a west to east progression through time in fluted point use due to either diffusion or colonization. As the Great Lakes assemblages are intermediate geographically between these dated assemblages, it is plausible to suggest an inception date for these sites of just before 11,000 years ago. Since the dates in both the East and West suggest that these points fell out of use at just after 10,500 B.P., a similar minimal age is suggested for the Ontario finds. In fact, this minimal estimate

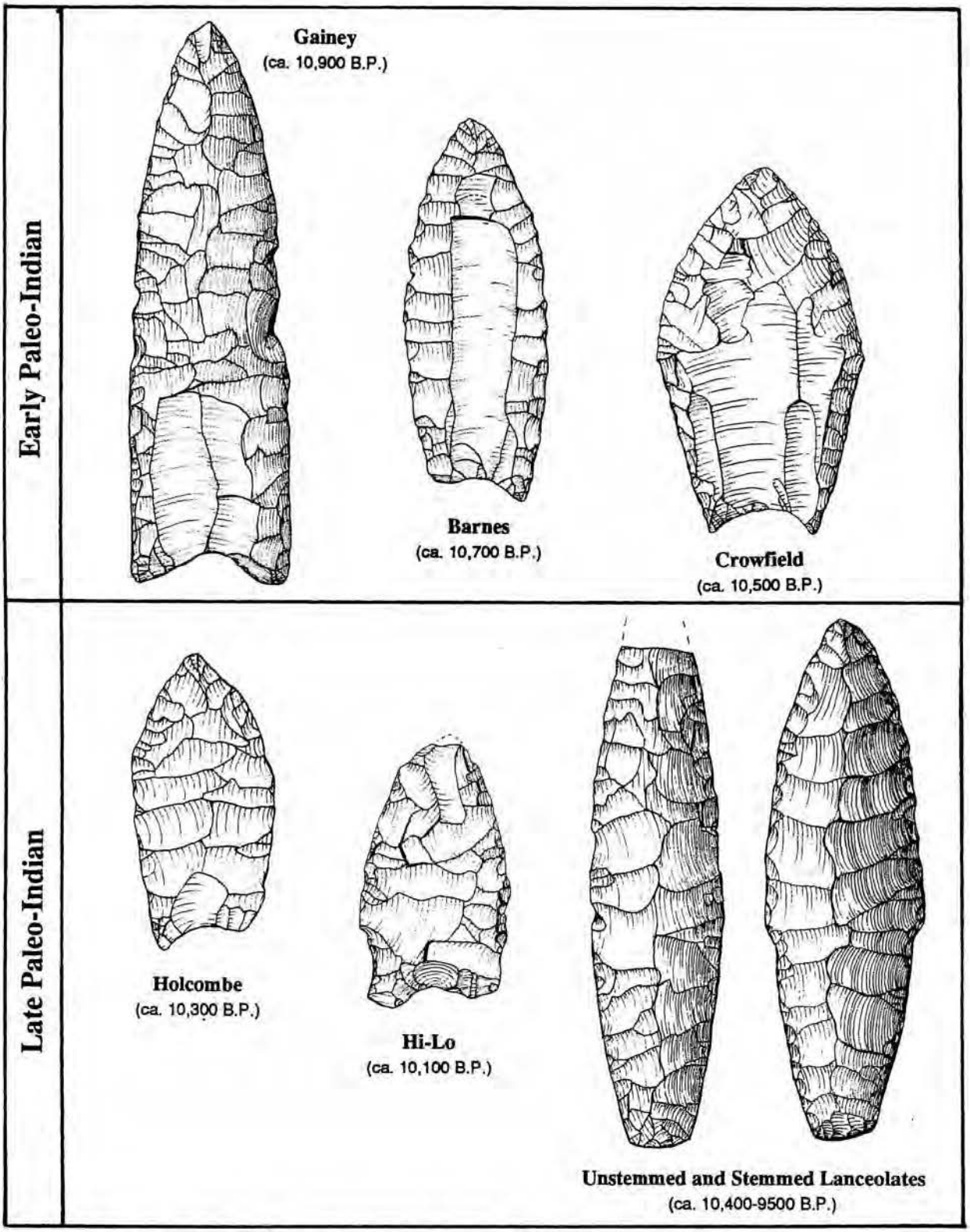

FIGURE 3.1: Paleo-Indian Point Styles in Southern Ontario. Points are shown actual size.

FIGURE 3.2: Barnes Fluted Points: Parkhill, Thedford II and Mullin Sites.

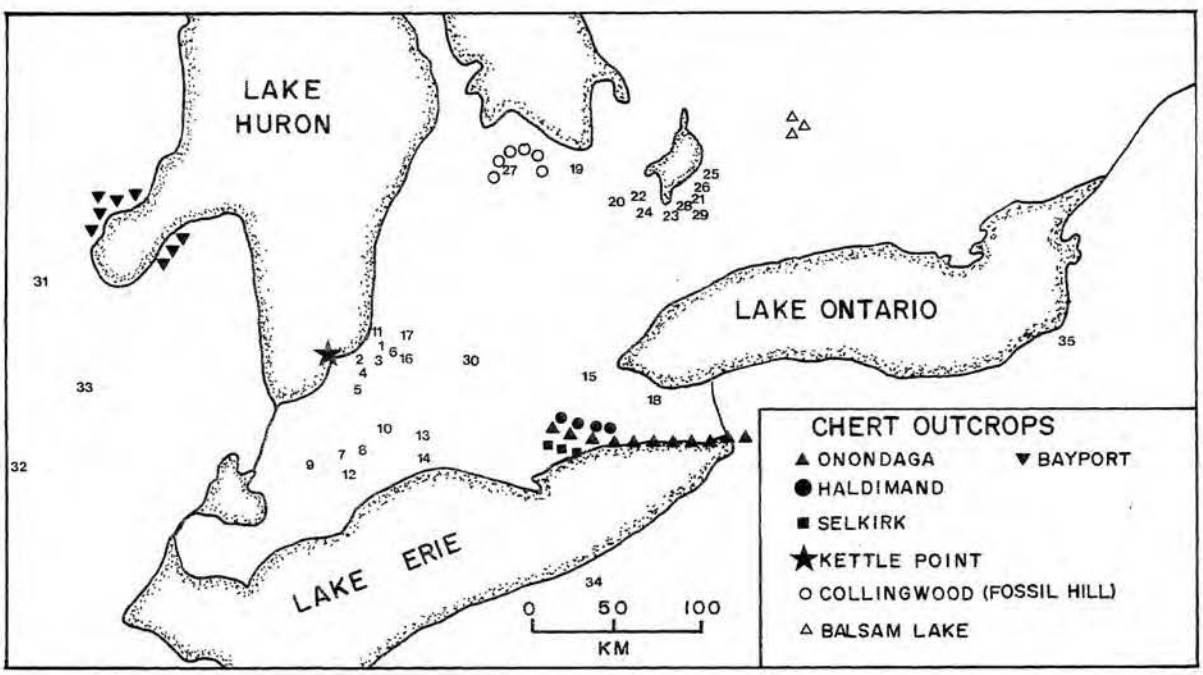

FIGURE 3.3: Location of Early Paleo-Indian Sites and Chert Outcrops. For key to site names, see Table 3.1.

TABLE 3.1: Early Paleo-Indian Sites in Southern Ontario and Adjacent Areas.

SITE	MAP#	METHOD OF* INVESTIGATION	POINT TYPES	REFERENCES
Parkhill	1	E	Barnes	Deller 1980a; Ellis 1979a; Roosa 1977a, 1977b; Roosa and Deller 1982.
Thedford II	2	E	Barnes	Deller & Ellis 1986; Ellis 1984.
McLeod	3	T	Barnes	Ellis 1979a, 1984.
Wight	4	S	Barnes	F. Wight: personal communication.
Stott Glen	5	S	Barnes	Deller 1988.
Dixon	6	S	Barnes	Ellis 1984.
Weed	7	T	Gainey	Ellis and Deller 1980.
Ferguson	8	T	Gainey	Ellis and Deller 1980.
Babula	9	S	Barnes	I. Kenyon: personal communication.
Crowfield	10	E	Crowfield	Deller and Ellis 1984; Ellis 1984.
Haunted Hill	11	S	Gainey	Deller 1976b: Plate IIA8.
Murphy	12	S	Gainey(?)	None
Baker	13	T	Gainey(?)	J. Keron: personal communication.
Mullin	14	S	Barnes	Deller 1988.
Hunt	15	S	Gainey(?)	Wm. Marshall: personal communication.
Schoefield	16	S	Barnes	Deller 1988.
Mawson	17	S	Barnes	Deller 1976b: Plate Vm.
Ward	18	T	Gainey	Ellis 1979b; Wm. Parkins: personal communication.
Fisher	19	E	Barnes	Storck 1983.
Banting	20	E	Gainey, Barnes	Storck 1979.
Udora	21	E	Gainey, Crowfield	Storck 1982, 1988.
Hussey	22	E	Barnes, Crowfield	Storck 1979.
Zander	23	E	Crowfield	Prideaux 1977, 1978; A. Stewart 1984.
McMillan	24	S	Crowfield(?)	Prideaux 1977, 1978; Storck 1982.
Graham	25	S	Gainey(?)	Storck 1982.
Watpool	26	S	Crowfield	Storck 1982.
Kolapore	27	S	Gainey	Storck 1984; Storck and von Bitter 1981.
Mehl	28	S	?	Storck 1982.
Bullfrog's Bellow	29	S	?	Storck 1982.
Uniondale	30	S	Gainey	Deller 1988.
Barnes, Michigan	31	E	Barnes	Voss 1977; H. Wright and Roosa 1966.
Leavitt, Michigan	32	E	Barnes	Shott 1986.
Gainey, Michigan	33	E	Gainey	Shott 1986; Simons et al 1984.
Nobles Pond, Ohio	34	S	Gainey(?)	Gramly & Summers 1986.
Potts, New York	35	E	Gainey, Barnes	Gramly & Lothrop 1984.

* E: Extensively excavated; T: Test excavated; S: Surface Collected.

is compatible with the known distribution of EPI finds in relation to dated late glacial geological features in Ontario and Michigan. In these areas, no definite finds of this affiliation have been made in the area inundated by proglacial Lake Algonquin (Ellis and Deller 1986; Farrand 1977; Jackson 1978, 1983a; A. Roberts 1984) despite the fact numerous sites are known concentrated and lining the landward side of that strandline. As that lake drained around 10,400 B.P. (Karrow and Warner: this volume), the lack of finds on its lakebed suggests EPI groups inhabited the area prior to that date or do not much post-date its draining (Figure 3.4).

Accepting a age estimate of ca. 11,000 to 10,400 B.P., the EPI occupations would have occurred when the environment of southern Ontario in terms of climate and vegetation was comparable to that of the modern sub-arctic of Canada's northland (Figure 3.4). Details of the nature of these early environments can be found in Karrow and Warner (this volume) and their implications for Paleo-Indian lifestyles are discussed more fully in a later section of this paper.

Artifact Assemblages

Stone Raw Materials

Early Paleo-Indian sites in the West suggest these groups produced an elaborate technology made on bone and ivory. However, in the Great Lakes area, the age of the sites, combined with the predominantly acidic soils of the region and the shallow depths of deposits, have led to a situation where only stone tools and the debris from their manufacture are usually preserved. As in other areas, these stone artifacts are exclusively made by chipping or flaking and are largely made on the highest suitable grades of materials available. These include fine-grained materials such as cherts and flints. This focus on chipped stone tool production and particularly the use of the highest grades of material in the manufacture of complex tool forms such as points, contrasts markedly with the assemblages of many later groups. Other materials were employed. Hammerstones used in stone flaking, as well as larger choppers and "planes" made on coarse-grained rocks, do occur. However, these implements are quite rare.

Among the fine-grained raw materials employed, several sources are represented among southern Ontario collections [Figure 3.3; see Fox (1979c) or Eley and von Bitter (1989) for a general description of these sources]. With a very few exceptions, data indicates this material was obtained from bedrock outcrops rather than secondary sources such as glacial till. Again, this preference contrasts with the chert use found among most later groups. Onondaga and Collingwood (Fossil Hill formation) cherts seem to have been widely prefered. Other Ontario sources such as Haldimand, Selkirk, Ancaster and Kettle Point were rarely used. At least in the case of the last-named, its rare use may be due to the fact the major outcrops would have been inundated by Lake Algonquin. In addition to the Ontario cherts, some items are known made on materials with sources outside the province including chert from Upper Mercer, Ohio, and Bayport, Michigan.

Besides the focus on the highest grades of material and certain sources to the exclusion of others, another notable characteristic of chert procurement of these groups is the transportation of certain materials long distances. Sites are known in the Northeast where the assemblages are made almost entirely (>75%) on a material which must have been procured up to 350 km away. Perhaps the best documented example of this pattern in Ontario occurs in the southern Huron basin area. Here, at least four sites with substantial tool assemblages (13 to >300 tools) are known of which over 80% are on Collingwood chert from 175-200 km to the northeast (Deller et al. 1986; Storck and von Bitter 1981). Moreover, there are at least 14 other assemblages in the southern Lake Huron area where the same preference appears to be present (Deller et al. 1986) but these sites have not yet been examined in detail. These sorts of chert preferences, and their occurrence at several sites suggest a widespread pattern where, in contrast to many later groups, there is no gradually diminishing use of a particular chert as one moves away from the source. Instead, there must be a rather abrupt cessation of the use of a particular chert at some point beyond ca. 250 km.

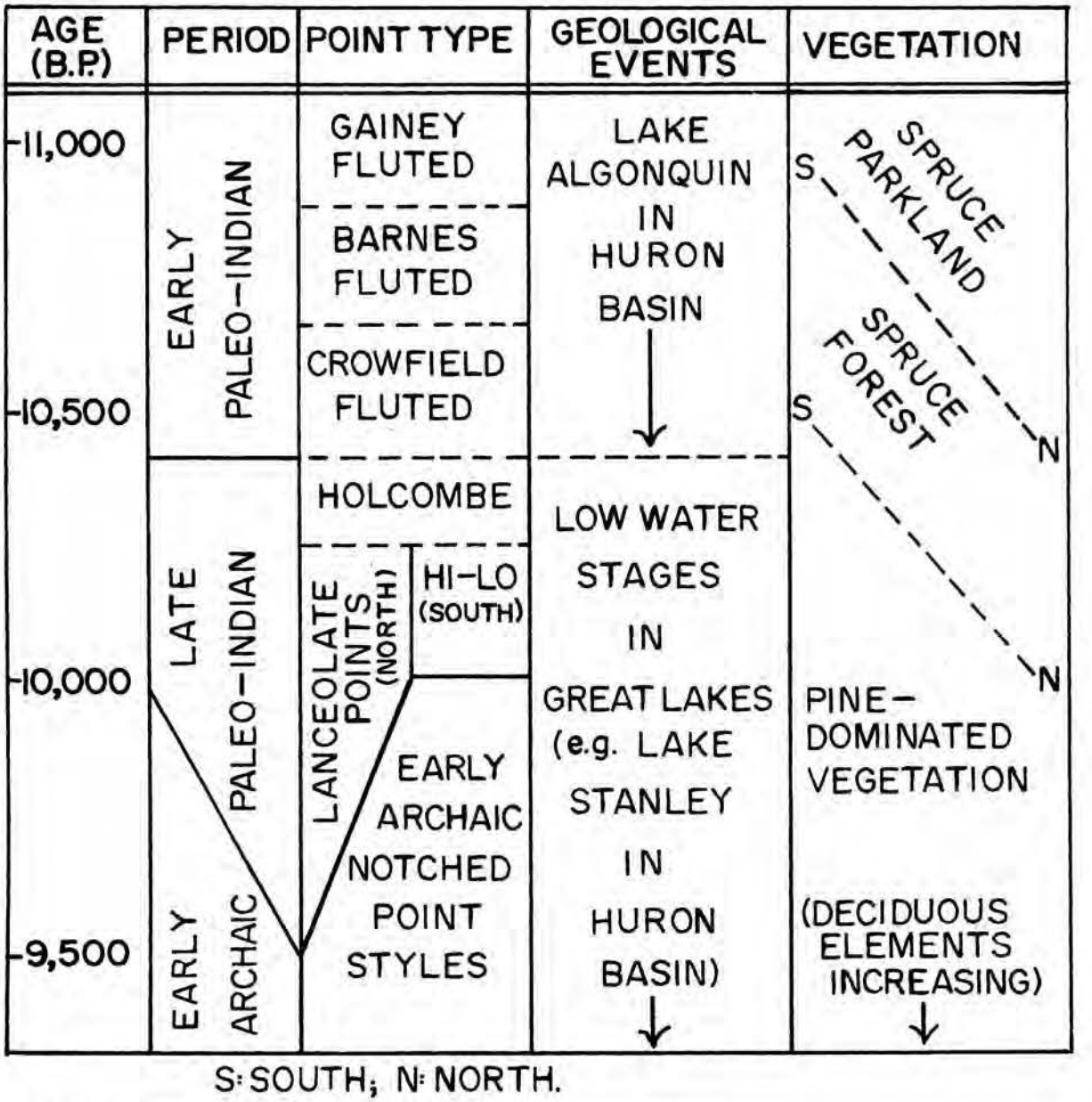

FIGURE 3.4: Age and Environmental Associations of Paleo-Indian Assemblages.

It is also notable that the small remainder of each assemblage tends to be made on one or two generally more exotic cherts. For example, at the southern Huron area sites noted above, around 10% or more of the assemblages are consistently on Bayport and/or Onondaga chert (Figure 3.3). Because of these patterns of chert procurement in which raw materials are moved great distances from sources, it is often possible to recognize Early Paleo-Indian sites in certain regions simply on the basis of the stone source employed. For instance, in all of the area west of London, Ontario, these groups appear to be the only ones to have used Collingwood chert.

Since these groups were transporting raw materials long-distance, the portability of the stone materials could become a problem. In contrast to metal tools, stone ones have relatively short use-lives. In order to increase the

transportability of the raw materials, groups employed several strategies. For example, the most wasteful stages of stone tool production which produce the greatest amount of unuseable stone debris are the earliest stages where the original blocks or nodules are reduced. In order to overcome this problem, Paleo-Indians carried out these stages at or near quarries and only transported materials in a finished or almost finished state ready for use. As a result, the debris from stone tool reduction at sites away from sources is very small and includes very few flakes over 1 gm in weight. Another strategy was to heavily resharpen or rework the working edges of tools. Thus, they produced largely tools with extensively flaked working edges which have more "formalized" shapes and can be placed into artifact types and classes such as end scrapers and side scrapers (see below). This practice contrasts with stone tool use among many later groups where a high percentage of the tools are simply briefly used flakes of an informal nature which usually lack flaking due to resharpening and are often difficult to classify into all but the broadest of tool classes.

Fluted Points

As implied above, a distinctive tool form associated with EPI sites is the fluted point. Besides the flutes themselves, other general distinctive characteristics of these items are: a lance-shaped or lanceolate outline lacking notches or stems; a concave base; and a dulling or grinding of the lower side edges (Figures 3.1 and 3.2). This last characteristic probably served to lessen the possibility of the point cutting the binding attaching the tool to the haft. Also notable is the high degree of skill in manufacture -- a skill which has only been rarely achieved by modern flint-knappers who attempt to replicate the prehistoric items. This skill is evident also in the rest of the tool kit and is good evidence that these tools were not simply made to carry out mundane tasks. In some respects, the care lavished in their manufacture suggests they were regarded almost as an art form by their makers.

It seems clear that these points served as projectile point tips but it is unknown whether they were mounted on thrusting spears, simple hand-propelled spears or spears/darts thrown with the aid of the spear-thrower or atlatl. The points often exhibit distinctive tip damage characteristic of use on projectiles. Moreover, on most occupation sites, the assemblages consist of basal fragments lacking tips (e.g. Figure 3.2c-g). The points were apparently broken off the site in hunting activities. The basal portions bound in the haft were carried back to the camp where they could be more leisurely extracted and replaced (F. Roberts 1935:21). Indeed, on known kill sites in other areas of North America, the point assemblages consist largely of tip ends or relatively complete points. Another indication of use primarily as points, are the patterns of resharpening. Point tips often become damaged in use. When the points are reworked to correct this damage and make them serviceable again, not much attention is given to the sides or lateral edges. This emphasis on correcting tip damage contrasts markedly with the reworking seen on slightly later point forms. It suggests that these points were largely designed as missile tips. However, they could and did serve occasionally for other uses.

Aside from the general characteristics such as flutes noted above, these points vary significantly in other characteristics. Some of this variation, such as in length, is probably due to some extent to the degree of resharpening. Other variation in these items may be due to the skill of an individual in manufacture (see Deller and Ellis 1986, for some plausible examples). Still other variation may be due to the raw materials employed. For example, at some sites there is a suggestion that original point length may be related to the chert used (Deller and Ellis 1986). Yet, when all of these sorts of factors are documented and accounted for, there is still considerable variation in Great Lakes points. This variation can be used to sort the points into three different forms or types: Gainey, Barnes and Crowfield (Deller and Ellis 1984, 1986, 1988; Roosa 1965, 1977a; Storck 1983, 1984a, 1984b).

Gainey points are named after a site in Michigan (Simons et al. 1984). They are consistently the largest of the fluted point forms recovered (Figures 3.1 and 3.5), especially in terms of thickness and basal width. They tend to have deep basal concavities (>5 mm), are roughly parallel-sided, generally exhibit single, relatively poor, fluting and lack or only have slightly developed flaring of the ears or fishtails.

Barnes points (Figures 3.1 and 3.2) are also named after a site in Michigan (H. Wright and Roosa 1966). Overall, they are small to medium in size and are intermediate between the Gainey and Crowfield types in terms of

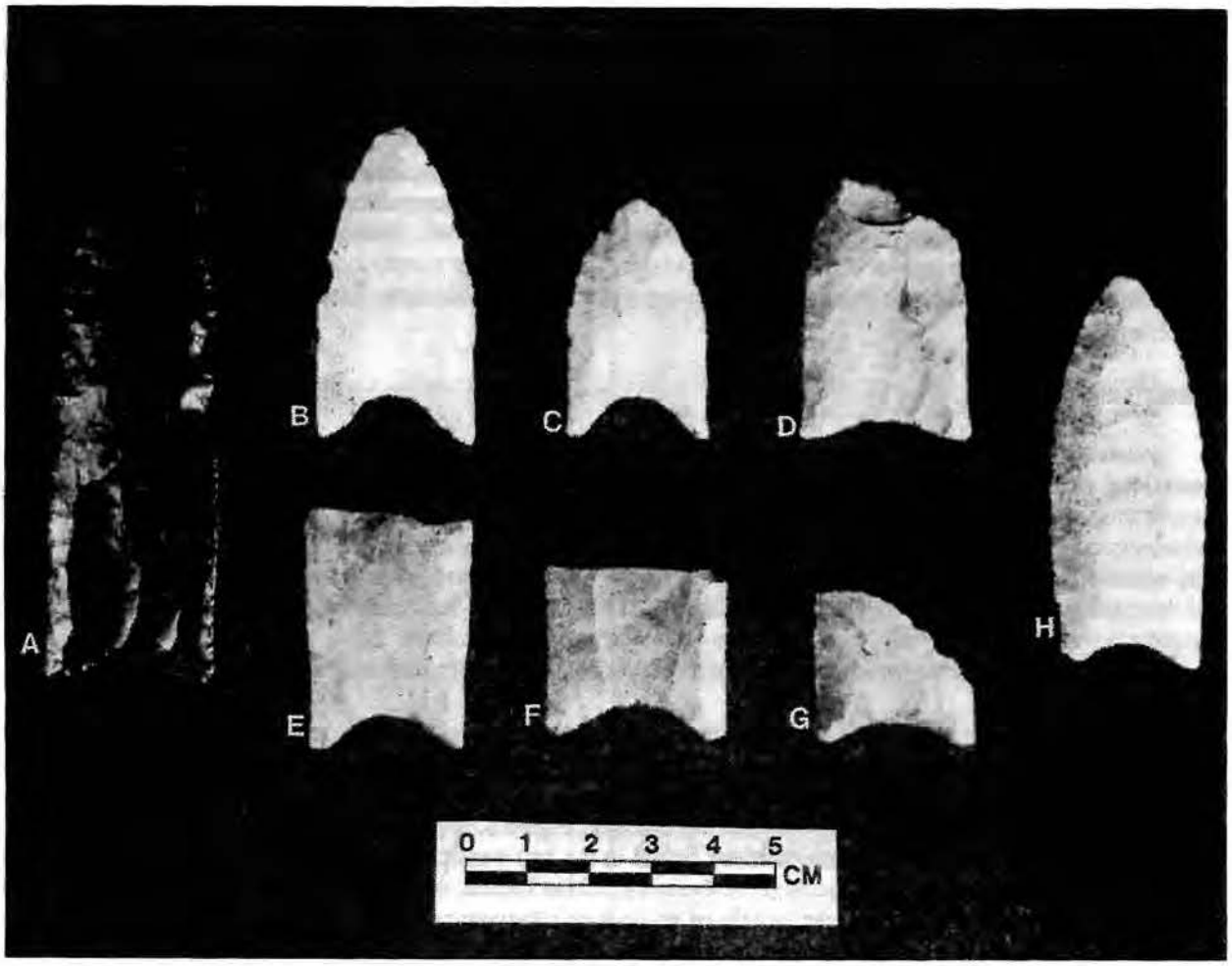

FIGURE 3.5: Gainey Fluted Points from Various Sites in Southwestern Ontario. C and H courtesy of Dr. William Finlayson and the Museum of Indian Archaeology, London, Ontario.

thickness, basal concavity depth and degree of expansion of the sides from the base. They often have fishtails or basal ear-flaring, exhibit long, usually single, flutes, and have a point of maximum width at or just below mid-point.

Crowfield points (Figures 3.1 and 3.6) are extremely thin (<5 mm) and wide points (25-35 mm) with shallow basal concavities (2-3 mm). They lack fishtails and often have slightly rounded basal corners. Although usually having multiple flutes, they are quite well-fluted, especially given their thickness. Lateral edges markedly expand from the base to a maximum width at or above mid-point. Through resharpening, they can take on a five-sided or pentagonal outline (e.g. Figure 3.6a, d).

As suggested on Figure 3.4, most researchers regard these types as representing a time series (Deller 1988, 1989; Deller and Ellis 1986, 1988; Roosa 1965; Shott 1986; Simons et al. 1984) from Gainey to Barnes to Crowfield. In fact, the trends throughout this sequence from larger to smaller points with better fluting are well-documented as time trends in fluted point forms in other areas of North America (see Gardner and Verrey 1979; Judge 1973; Wormington 1957). Researchers have also used these types as diagnostic indicators of wider entities referred to either as complexes, industries or phases, and named respectively as: Gainey, Parkhill and Crowfield (Deller and Ellis 1988; Roosa 1977b; Roosa and Deller 1982; Shott 1986; Storck 1984a).

FIGURE 3.6: Crowfield Fluted Points, Crowfield, Bolton and Rice Sites.

Other Tools

Paleo-Indian groups produced a wide range of stone tool forms other than points. We cannot describe in detail all of these forms here and will focus solely on some of the more common and distinctive types. For more detailed summaries, the interested reader is referred to Ellis (1984) and Ellis and Deller (1988). Among the bifacial tools, one form is a miniature point made on the channel flakes derived in making the grooves on the fluted points (Figure 3.7o). These items could be children's "toys." Another bifacial form is the *pièce esquillée* or "scaled piece." These objects are roughly square to lozenge-shaped in plan and are distinguished by heavy battering and shattering on opposing edges (Figure 3.7n). Given this battering, some interpret these items to be "wedges" used in splitting wood or bone (e.g. G. MacDonald 1968). In contrast to sites in other areas of eastern North America, these items are rare on Ontario sites. The remaining bifacial tools consist largely of cutting tools or knives. One distinctive form is a large, well-made biface which has been resharpened by beveling along the sides of the tip (Figure 3.8a). Another form is roughly lunate in outline (Figure 3.8b). One edge is relatively straight and exhibits a flat surface or backing used to hold the tool while the opposite working edge is thin and finely flaked.

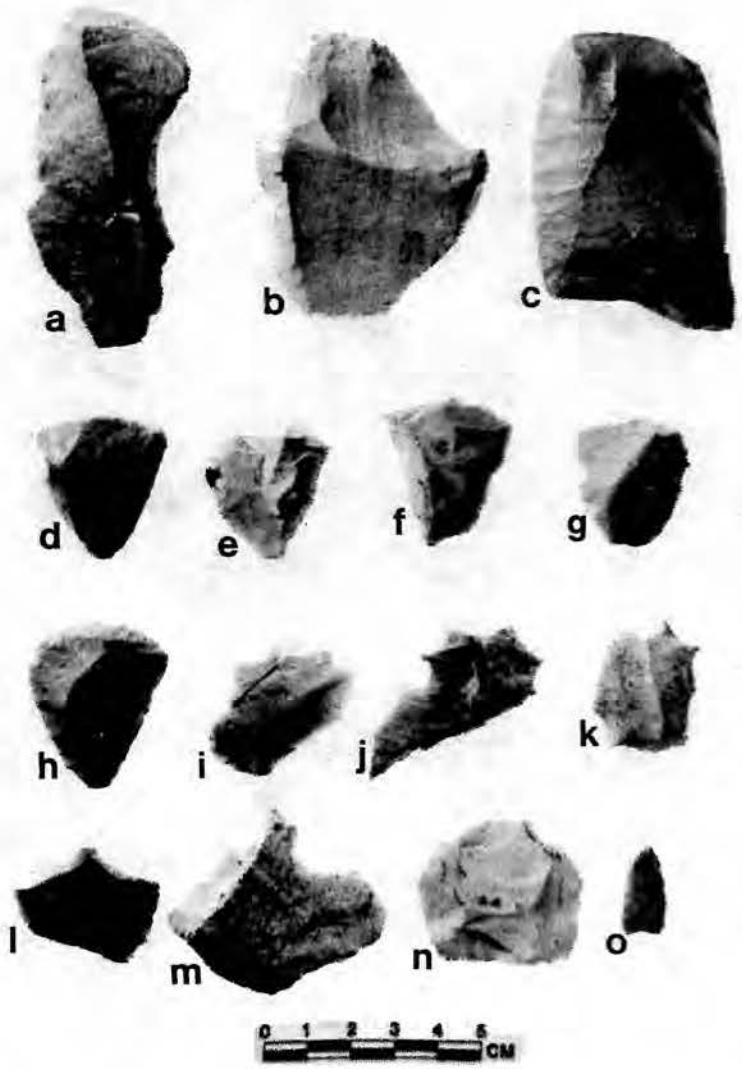

FIGURE 3.7: Early Paleo-Indian Stone Tools. A-C: Side Scrapers; D-H: Trianguloid End Scrapers; I-K: "Gravers"; L-M: Beaks; N: Pièce Esquillée; O: Channel Flake Point.

The remaining tool forms are strictly unifacial items and they include several tool forms found on these sites throughout North America. One very common class of tools is end scrapers; an elongated flake with a flaked working edge at one end. Of these, the trianguloid end scraper, so named because they are roughly triangular in outline (Figure 3.7d-h), is the predominant form. They have a steeply beveled, relatively flat bit at the working end. The sides are lightly retouched such that they taper towards a narrow end opposite the bit. There seems little doubt that this tapered end was made to fit into a socketed handle. Yet, a few also have lateral notches which suggests some tools were hafted in slotted handles with the side edges exposed. Regardless of the way they were hafted, these end scrapers can exhibit slight projections or spurs at or near the juncture of the bit and the sides which served for engraving and other functions. There are also a variety of tool forms generally subsumed under the category of side scraper because the extensively flaked working edge occurs along the side of the flake (Figure 3.7a-c). This edge ranges from convex to straight to concave in outline shape. The concave forms (Figure 3.7a) are often referred to as "spokeshaves" used in shaping or shaving cylindrical objects such as spearshafts, and sometimes have spurs.

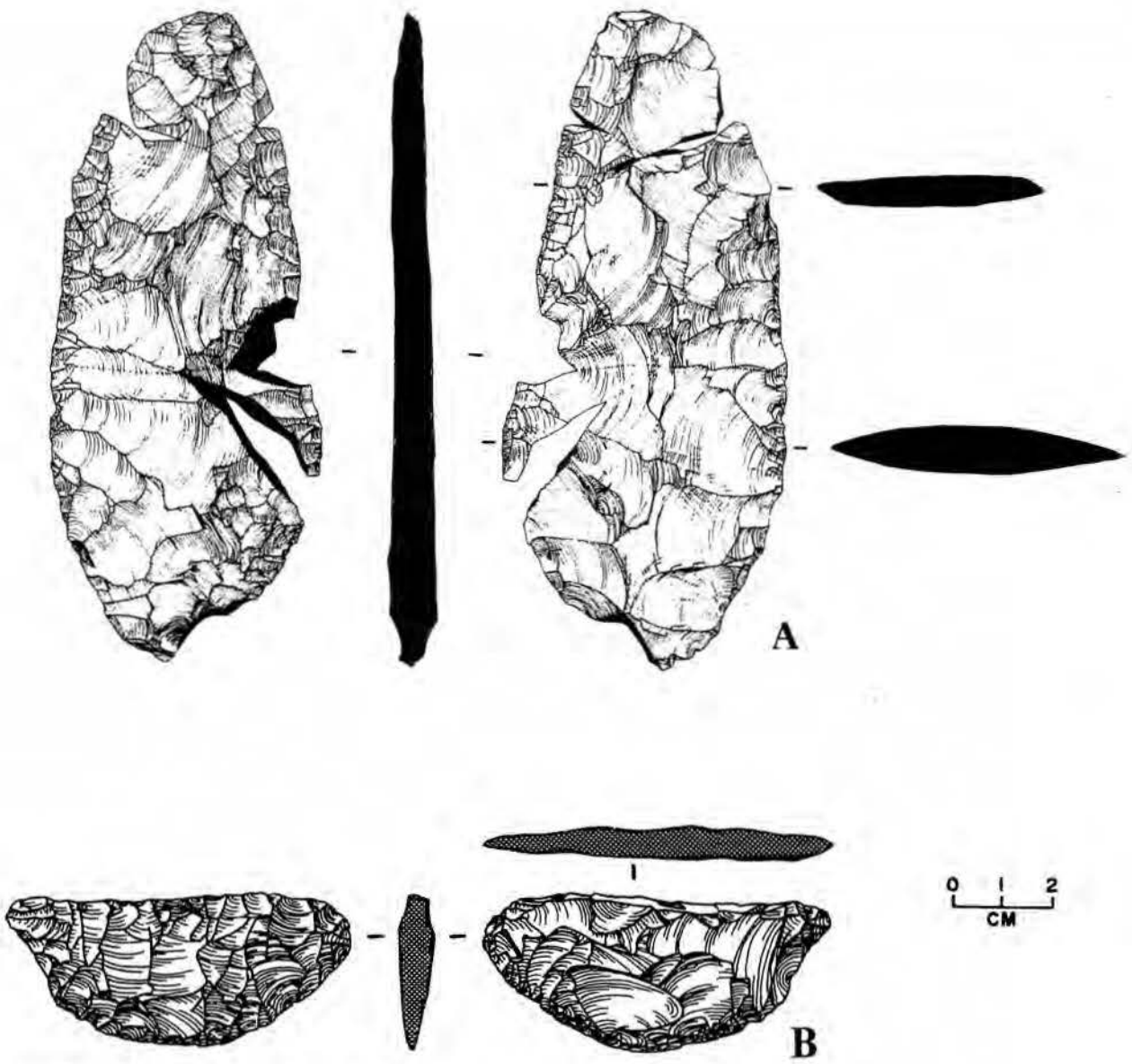

FIGURE 3.8: Early Paleo-Indian Bifacial "Knives." A: Large Alternately Beveled Biface, Crowfield Site; B: Backed Biface, Thedford II Site. Copyright Buffalo Museum of Science, reproduced by permission from Deller and Ellis 1988.

Several other tool forms have narrow, pointed to slightly convex working edges which were apparently used in the incising, perforating and slotting of wood, bone and hide. Some have one or more very small spurs and are usually referred to as gravers (Figure 3.7i-k). These can be almost needle-like and this delicacy suggests they served in perforating soft materials such as hides. It also has been suggested that these might be tattooing needles (F. Roberts 1936:26) as this practice was widespread among aboriginal groups. Tool forms with much more massive, pointed edges also occur (Figure 3.7l-m). These are generally referred to as beaks or beaked scrapers. Some have tapered ends opposite the working edge and were apparently hafted (Figure 3.9a,b). Still another tool form in this general class of tools has a narrow, less pointed, more convex tip (Figure 3.9c). These apparently served as scraping tools used in confined spaces such as in the hollowing out of sockets or widening of grooves in wood or bone.

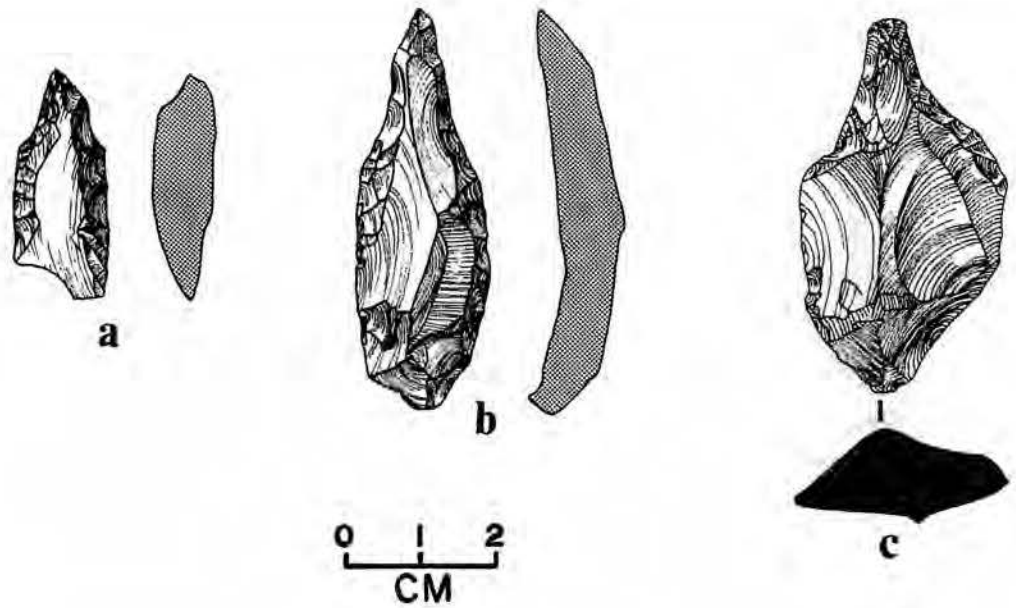

FIGURE 3.9: Early Paleo-Indian Unifacial Tools A-B: Hafted Perforators or Beaks; C: Narrow End Scraper. Reproduced by permission of Kent State University Press from Ellis and Deller (1988).

Site Characteristics

Despite the fact that over 50 EPI sites are known in southern Ontario alone, these sites are rare compared to those of later groups. Usually, sites are found on loamy well-drained soils with a southern exposure which would provide a more comfortable location in which to camp (Deller 1976a, 1979). They also tend to be in elevated situations such as on knolls. Besides being better drained, these locations would have provided a good view of the surrounding terrain to watch for game (Storck 1982).

Overall, these sites as well as isolated tool finds are found throughout southern Ontario with the notable exception of the areas inundated by Lake Algonquin adjacent to modern Lake Huron. Since the water levels in the other modern drainage basins at this time such as Erie were much below present levels, it seems very likely that some sites are now under water.

The myth seems to have arisen that Early Paleo-Indian sites are located only on abandoned glacial lake strandlines or beaches and that these are the only areas where archaeologists have searched for early sites. This impression is decidedly not the case. For example, several sites in Ontario as well as in adjacent Michigan such as Thedford II, Crowfield, Barnes and Leavitt (Deller and Ellis 1984, 1986; Shott 1986; Voss 1977; H. Wright and Roosa 1966) are not on strandlines. Nonetheless, many sites are known from the vicinity of glacial lake strandlines. These include not only shoreline features of Algonquin but also those of older lakes such as Warren, Arkona and Whittlesey (Deller 1976a, 1979). By far, however, most sites are associated with the Algonquin shoreline in both the southern Huron basin area (Deller et al. 1986) and in south-central Ontario (Storck 1982). As implied above, this concentration suggests contemporaneity. However, it should be noted that there is undoubtedly a bias towards known sites near Algonquin because research in some areas has focused solely on that strandline. Nevertheless, in

areas where considerable attention has been paid to both non-strandline areas and the older strandlines, sites appear to be much less concentrated and are certainly more ephemeral (Deller 1976a, 1979; Deller and Ellis 1988; Jackson 1983b).

The presence of Lake Algonquin might have attracted occupations for several reasons. Vegetation may have remained more open in these areas due to the cool winds blowing off the lake. These more open areas would have been more attractive to herbivores and hence, to their hunters. As well, the more open nature of these areas would have made travel easier. In fact, it may be that the lakes themselves allowed easier movement with watercraft. These areas perhaps could have also been attractive for resources such as fish and waterfowl. Moreover, during the warmer months, the breezes blowing off the lake would have made insect pests more tolerable both to people and probable prey species such as caribou.

While these sorts of explanations may account for the sites along the Algonquin strandline, it does not account for the sites known from strandlines such as Whittlesey and Arkona. These lakes are much much too old to have been contemporary with the Paleo-Indian occupations. Therefore, these groups must have sought out these strandlines for other reasons. It has been suggested (Deller 1976a, 1979; Roosa 1968, 1977a:353) that these areas were occupied because they represented an edge or ecotone between environmentally different areas. For example, lowland areas flanking the strandline were poorly-drained and thus, supported a different flora and fauna than the upland areas above the strandline. By locating camps on the abandoned strandlines themselves, a wider variety of resources could be more easily exploited from one location. In this regard, it is notable that "interior" sites can be on elevated areas which are *not* strandlines overlooking areas of poorly drained, muck soils. Therefore, it would seem that a certain environmental situation and not necessarily the abandoned strandline itself was being sought out for occupation by these groups in interior locations.

As implied earlier, most sites yield only lithic materials. Sometimes, the remains of hearths or firepits have also been uncovered but these are rare. As well, caches of stone artifacts have been reported. At the Udora site, a pit containing over 60 unifaces and tool blanks was uncovered (Storck 1981). Probable caches also have been reported from other Great Lakes sites although these had been disturbed by plowing (see Shott 1986: 203). A good example is a cache of as many as 13 finished or almost finished points (e.g. Figure 3.2a,h) recovered from one small area at the Thedford II site (Deller and Ellis 1986).

There is no evidence in the form of structural remains for the construction of substantial dwellings. Almost all known sites are quite small and consist of a single cluster of material distributed over an area of less than 200 sq. metres. Two notable exceptions are located on the Algonquin strandline. One is the Parkhill site (Figure 3.3; Deller 1980a; Roosa 1977a, 1977b; Roosa and Deller 1982). This site consists of at least 9 major concentrations of material distributed over an area of 6 ha. Individual concentrations cover from ca. 400 to 2,500 sq. metres. Still larger is the Fisher site (Figure 3.3; Storck 1978a, 1982, 1983, 1984a). It includes 19 major concentrations of artifacts distributed over an area of ca. 20 ha.

For the most part, all known sites appear to be campsites or "way-stations" used during travel episodes where a wide variety of everyday activities were carried out such as tool kit refurbishing and the processing of hides for clothing and shelter. Of course, all sites did not witness identical activities. For example, some sites such as the Barnes site in Michigan (Voss 1977) are dominated almost totally by point-making debris and may have been occupied largely by males during hunting expeditions. Others however, such as Thedford II (Deller and Ellis 1986; Greco 1985), exhibit a wider range of tools suggesting a diversity of activities were performed by a wider segment of the population. There are also contrasts between the concentrations at the larger sites. For example, 4 of the main concentrations at the Parkhill site are in close juxtaposition and dominated (over 45%) by point-making debris and points damaged in use whereas the remaining concentrations have few points (< 20%) and yielded a diversity of other unifacial and bifacial tools. It is possible that the former areas were specialized male work locations while the latter represent actual living areas where the population as a whole camped during the occupations. Similarly, some areas at the Fisher site (Storck 1984a) are dominated by large amounts of waste and cores indicating they are the locations of the primary reduction of stone materials whereas other concentrations represent only the finishing or

resharpening of tools. It is possible that the latter locations are actual living areas and were separated from areas of primary stone reduction to keep them free from debris.

There is a lack of definite kill-sites where the communal capture of game was undertaken. This absence is a major contrast with sites in western North America where several kill-sites are known. This could be simply a product of the low visibility of those sites in conditions where faunal remains are not preserved. The only resource exploitation sites known are those where stone material for tools was procured. In Ontario, the one reported site of this nature is the Kolapore site (Storck 1984a). It is located adjacent to an outcrop of Fossil Hill formation chert near Collingwood, Ontario.

Certainly lacking thoughout Ontario and the rest of the East are cemeteries of this age. One of the very rare suggestions of EPI burial practices in eastern North America is at the Crowfield site near London, Ontario (Deller and Ellis 1984; Ellis 1984). This site produced some debris suggesting it was a small campsite or way-station. However, excavations also uncovered a ca. 1.5 metre diameter circular pit filled with a large amount of heat-fractured lithic material. Re-fitting of the heat-shattered fragments revealed the contents to include over 200 tools and preforms. These included almost 30 fluted bifaces, 15 "backed" knives, about 40 "roughed-out" preforms for points, 18 side scrapers and over 40 large flakes suitable for use as side scrapers and other unifacial tool forms. Except for the heat-shattering, these items were complete. They lacked evidence of reason for discard, such as breakage in manufacture or use, as is common in occupation site collections. Combined with the sheer quantity of material and a general lack of flaking debris, it is clear the feature does not represent simply the discard of worn-out tools. Rather, it is ceremonial in nature. Despite an absence of preserved bone, it has been suggested this pit represents grave goods associated with a cremation. This view is strengthened by the fact cremation as a burial practice and the inclusion of stone grave goods is definitely known to occur in slightly later contexts in the Great Lakes area -- the Late Paleo-Indian Renier site in Wisconsin (Mason and Irwin 1960; Mason 1981:117-121).

Lifeways of Early Paleo-Indian Groups

As noted earlier, Paleo-Indians were non-agriculturalists who depended on the hunting and gathering of wild foodstuffs. They would have moved their encampments on a relatively regular basis to be in those locations where these resources naturally became available throughout the year at different times and places. The size of the groups occupying any particular location would have varied depending upon the nature and size of the available food resources in that location. In short, populations would have aggregated and dispersed at various times throughout the year depending upon the available resources.

As stated above, during the estimated time of the occupations between about 11,000 and 10,400 years ago, the vegetation cover and environment of southern Ontario was comparable, but not identical, to that of the modern subarctic. Around 11,000 B.P., it was primarily a spruce parkland/woodland similar to modern forest-tundra transition zones. Through time, this parkland was replaced by a more closed vegetation often compared to modern boreal forests. By ca. 10,600 to 10,200 B.P., pine was a major component of the vegetation and the forests resembled those in the southern parts of the modern boreal forest (Karrow and Warner: this volume). As with the modern equivalents, the EPI environment would have been of a low biotic productivity and the failure of certain natural resources to appear would have been a constant threat to well-being. In essence, food resources would have been few and far between and relatively unpredictable in the magnitude and location of their occurrence. In fact, the Paleo-Indian environments of the Northeast in general may have been even more unstable than the modern analogues (Curran 1987).

A general paucity of plant foods is a major characteristic of such environments. On this basis, it seems very likely that these groups subsisted largely on the hunting and trapping of game supplemented perhaps by some degree of fishing. The exact list of species exploited is unknown due to a general lack of faunal preservation. The only

reported Ontario site with some faunal remains is the Udora site where a small amount of heavily burned or calcined bone was recovered. Identified species include *Leporidae* (hare or rabbit), *Canidae* (fox) and large cervid which could be either caribou or deer (Storck 1988:24). In areas of northeastern North America outside Ontario, caribou, beaver and some fish remains have been reported (McNett 1985; Spiess et al. 1985). Mammoths and mastodons were present in Paleo-Indian times (see McAndrews and Jackson 1988) but the available evidence for their exploitation in the Great Lakes area is certainly not definitive (e.g. D. Fisher 1984; Palmer and Stoltman 1976). Certainly, mastodons are known to have been hunted in areas just to the south (Graham et al. 1981). Other animals known to have been present which could also have been exploited included musk-ox, deer, moose and ground squirrel (J. Brown and Cleland 1968; Cleland 1966:19-20). Since only caribou remains have been reported from more than one site, these are often emphasized as the major game animal pursued and as a major determinant of Paleo-Indian patterns of movement (e.g. Deller 1976a, 1979; Jackson 1982; Storck 1984a). Some of the larger sites in particular such as Parkhill and Fisher, as well as those in other areas of the Northeast (e.g. Gramly 1982; Spiess 1984), are often interpreted as locations where larger population gatherings occurred to exploit herds of these animals. It is argued that only concentrated and abundant resources could support these larger aggregations and caribou would have been one of the few if not only resources of this nature available. Moreover, this view is consistent with the fact these kinds of sites do not occur in areas to the south where the existing environments at the time did not support a fauna on which communal hunting could be based (Meltzer 1984, 1985).

In any case, as with modern sub-arctic groups, the low biotic productivity of the EPI environments means that relatively large "territories" would have to be exploited over the course of a year. A large territory size is consistent with archaeological data. The fact that most site assemblages are dominated by stone from one source (>75%) suggests the stone was procured directly at some point in an annual round rather than by indirect mechanisms such as exchange. Often, the stone employed was procured at a large distance (>175 km) from the site itself. Estimates of territory sizes based on this information suggests these areas were comparable and often larger than those areas exploited by modern, highly mobile, sub-arctic groups (Ellis 1984:352-356; Shott 1986:141-142). In general, the small size of most sites suggests they were not occupied for a very long time. In other words, these groups not only exploited large areas but frequently moved their residences, remaining in certain locations for only brief periods of time. This may also account for the absence of evidence of any relatively substantial structures. Portable structures designed for short-term use, such as tents, may have been the norm. Furthermore, the absence of sites with several interments may be related to a high residential mobility. It seems unlikely that individuals would die consistently in the same location. Therefore, one would not expect repeated burials in that location.

Several other aspects of EPI life can be inferred by comparisons to modern groups exploiting large territories and having high residential mobility. First, the large territories suggests these groups possessed transportation aids such as sleds, toboggans, and even watercraft (Ellis 1984:356). Only groups possessing these aids could fruitfully exploit such large areas. Second, it seems possible that these groups were not highly reliant on storing food products. If resources can be taken in quantity beyond immediate needs, one can remain in one location for some time living on stored food products beyond their natural season of availability. This obviates to some extent, the need for wide-ranging movement and might favour smaller territories. Moreover, storage consistently results in larger, more substantial sites because the sites are occupied longer. However, as noted earlier, these larger sites appear to be relatively rare. In addition, it is possible that the larger sites do not represent long occupations but rather, consistent use of the same location over some period of time.

Third, these large areas suggest there was an absence of specialists who made items such as fluted points despite the advanced skills needed to manufacture them. Given the large areas exploited and the fact the population would be dispersed into smaller units for most of the year, it would be difficult to obtain these items necessary for survival if they were produced only by certain specialists. Moreover, the low biotic productivity means that surpluses to support even part-time specialists (essentially absolve them from undertaking basic subsistence tasks) would be lacking. Also, restriction of production to only certain individuals would place a considerable burden on those individuals to transport stone raw materials long distances. In fact, among historically known hunter-gatherers, specialists occur only among groups which are relatively sedentary in environments of a higher biotic productivity (Driver and Massey 1957: 362; Seeman 1985) such as in California and on the Northwest Coast. They are totally unknown among groups living in sub-arctic environments comparable to those of southern Ontario 11,000 years ago.

Finally, the large areas exploited suggests population densities were low. This inference is also consistent with the relative rarity of EPI sites and generally, their smaller and more ephemeral nature. In fact, it does not seem unlikely that the population of southern Ontario may have been on the order of only 100 to 200 individuals (Roosa 1978, 1980).

Groups at low population levels must cope with certain problems. For example, it can be difficult for individuals to find mates of the right age and sex such that a viable breeding population can be maintained (Wobst 1974). In order that this problem can be overcome, typically, modern local hunter-gatherer groups maintain contacts over a wider area than that which they could reasonably exploit over the course of a year. Moreover, movement of individuals between local groups over wider areas is unrestricted. It seems evident that these sorts of factors partially account for the suggestion on sites in Southern Ontario of far-ranging contacts, such as the consistent presence of cherts derived from sources in Ohio and Michigan.

There are, however, other factors favouring such contacts. For instance, resource failures or shortages could have been common in the relatively unstable and unpredictable environments of the time. In addition, in any particular location, the size of the population which could be supported would vary from year to year and over longer time spans due to natural fluctuations in resources (see Waisberg 1975). Therefore, it is necessary to maintain more wide-ranging contacts so that individuals can move freely from area to area and that populations can be distributed in sizes complimentary with the resources available. Furthermore, in times of resource failure, these more wide-ranging ties mean that individuals undergoing stress can draw on the support of a larger number of individuals for aid in the form of gifts of food and other assistance. Among modern hunter-gatherers, these social ties are often initiated and maintained through "gift exchange." The content of this form of exchange is not that important. Typically, it involves the exchange in minor amounts of everyday items such as tools. What is important is the act of exchange itself as it forms and maintains social ties and obligations. Again, the widespread distribution of certain exotic lithics in limited amounts on Ontario sites suggests this form of exchange was practised.

Late Paleo-Indian

Background

Although there are some other differences to be described below, the major distinction between Early and Late Paleo-Indian (LPI) materials is based largely on contrasts in point forms. LPI points share many characteristics with earlier forms including a general lanceolate outline and an absence of notches, grinding of the base and lateral basal edges and excellence in manufacture. The major difference is a lack of fluting.

Relative to EPI materials, little attention has been paid to locating and excavating LPI sites in southern Ontario. Nonetheless, several are now known and a few have seen some degree of excavation (Figures 3.10, 3.11; Table 3.2).

Age

In the West and southern areas of the East, the replacement of fluted with unfluted LPI point forms is dated to around 10,400 to 10,200 B.P. by C-14 (Frison 1978; Frison and Stanford 1982; Goodyear 1982; Holliday et al. 1983). Although dates are lacking for this transition in the Great Lakes area, there are suggestions it occurred about the same time in that region. In contrast to fluted points, LPI point forms are known to occur on the bed of Lake Algonquin which drained around 10,400 B.P (Ellis and Deller 1986). This includes LPI point forms such as Holcombe (see below) which are believed to be the earliest of the LPI point types. Providing minimum estimates for

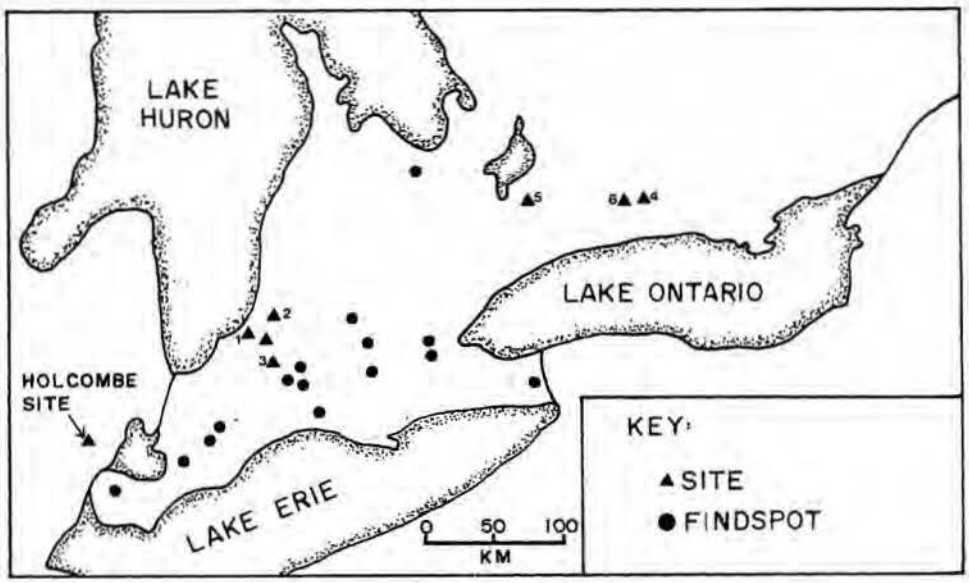

FIGURE 3.10: Late Paleo-Indian Holcombe and Holcombe-Like Site Locations. For key to site names, see Table 3.2.

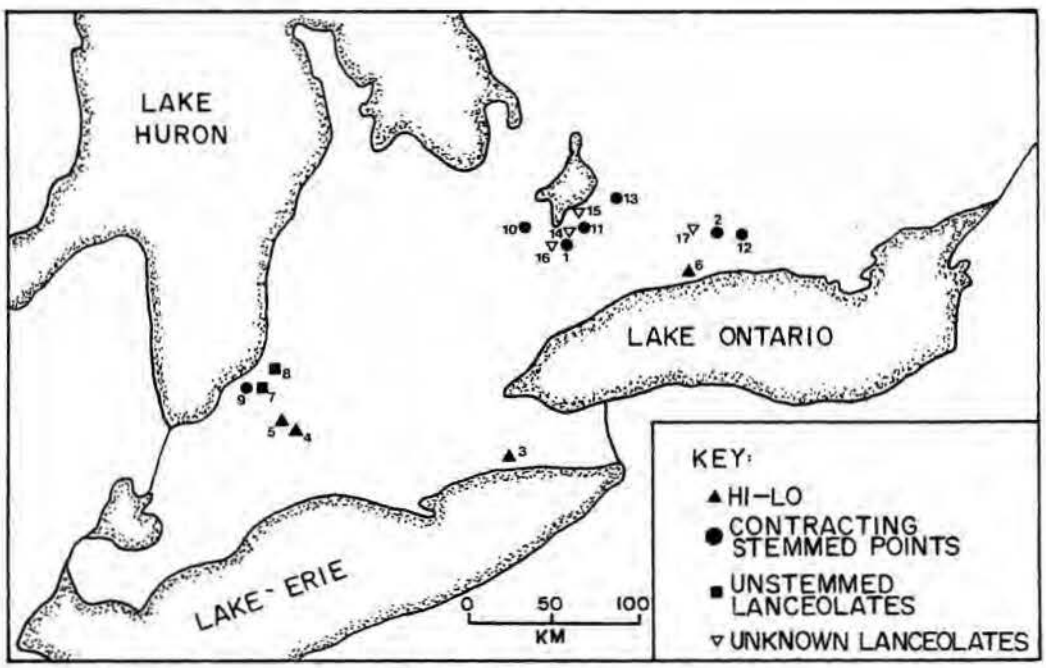

FIGURE 3.11: Late Paleo-Indian Hi-Lo and "Lanceolate" Site Locations. For key to site names, see Table 3.2.

these assemblages is difficult. Comparisons of the southern Ontario point forms to well-dated LPI point types in other areas suggests they largely pre-date ca. 9,500 B.P. (Dibb 1985:236; Ellis and Deller 1986:55). Thus, an overall age of between 10,400 and 9500 years ago is suggested (Figure 3.4).

TABLE 3.2: Late Paleo-Indian Sites in Southern Ontario.

SITE	FIGURE & MAP#	METHOD OF INVESTIGATION	POINT* TYPES	REFERENCES
Tedball	10-1	S	Holcombe	Ellis and Deller 1986.
Dixon	10-2	S	Holcombe	Deller 1988.
Strathroy	10-3	T	Holcombe-like	Deller 1988.
Inner City Angels	10-4	S	Holcombe-like	Jackson 1986a and personal communication.
Zander	10-5 11-1	E	Holcombe-like;C.S.L.	A. Stewart 1983, 1984.
Blezard	10-6 11-2	S	Holcombe-like;C.S.L.	Jackson 1986a and personal communication.
Allan	11-3	T	Hi-Lo	R. Parker 1986a, 1986b.
Welke-Tonkonoh	11-4	E	Hi-Lo	Ellis 1981; Ellis and Deller 1982.
Stewart	11-5	T	Hi-Lo	Ellis 1981; Ellis and Deller 1982.
ENL-Hi-Lo	11-6	S	Hi-Lo	A. Roberts 1985.
Pascoe	11-7	S	U.L.	Ellis and Deller 1986.
Heaman Area A	11-8	S	U.L.	Deller 1976b; Ellis and Deller 1986.
Hall	11-9	S	C.S.L.	Ellis and Deller 1986.
Hussey	11-10	E	C.S.L.	Storck 1979.
Deavitt	11-11	E	C.S.L.	Dibb 1985.
Linton	11-12	S	C.S.L.	Jackson 1986a and personal communication.
Macdonald	11-13	S	C.S.L.	Storck 1982.
Cowieson-Fenton	11-14	S	Un. L.	Dibb 1985.
Draper	11-15	S	Un. L.	Dibb 1985.
Boag	11-16	S	Un. L.	Storck 1982.
MacMahon	11-17	T	Un. L.	L. J. Jackson: personal communication.

* U.L.:Unstemmed lanceolate; C.S.L.: Contracting stemmed lanceolate; Un. L.: Undifferentiated lanceolate.

Artifact Assemblages

Stone Raw Materials

There is a persistence into LPI artifact assemblages of certain characteristics found among earlier materials. Besides a continued reliance on chipped stone tools and specific tool forms, these include characteristics of lithic procurement. Among these characteristics are a reliance on fine-grained materials such as cherts and a tendency to focus on certain bedrock sources of those materials. Chert sources employed earlier continue to be used such as Onondaga and, in some areas, Collingwood. However, other sources which were previously largely ignored are used more frequently (Figure 3.3). These include Haldimand (R. Parker 1986b), Balsam Lake (von Bitter and Eley 1984) and Kettle Point (Janusas 1984). The increasing use of the last named may be due simply to the draining of Lake Algonquin which exposed the previously inundated outcrops. Exotic materials from outside the province continue to occur in limited amounts.

There are suggestions that LPI groups continued to procure and transport cherts such that assemblages are generated almost solely on one material some distance from the source. A good example is Area C at the Welke-Tonkonoh site west of London, Ontario, where over 80% of the tools were made on Haldimand chert procured some

200 km to the southeast (Figure 3.10; Ellis 1981; R. Parker 1986b). Similar patterns are suggested in adjacent Michigan (e.g. Fitting et al. 1966:126). As a result of this procurement pattern, the practices designed to reduce the bulk of transported lithic material persist into LPI assemblages. All primary manufacture occurs at lithic sources and the waste flakes recovered from sites away from those sources are very small (e.g. Dibb 1985). As well, tool assemblages from sites located some distance from stone source locations are dominated by formal and highly retouched or resharpened tools such as scrapers and there is a paucity of simple, briefly used, flake tools.

Point Forms

Aside from a lack of fluting and some general characteristics shared by all Paleo-Indian point forms such as lateral basal grinding, there is a considerable amount of variation in LPI points. We believe this variation is expressive of temporal as well as spatial variability. Two general classes of points are recognized within which more specific styles or types can be isolated.

The first class includes forms with concave bases and includes two point types: Holcombe (Wahla and DeVisscher 1969) and Hi-Lo (Fitting 1963). Both these forms are named after sites in Michigan where they were first reported (Fitting et al. 1966; Fitting 1963). Holcombe forms (Figures 3.1 & 3.12a,b) resemble points from the West referred to as Midland or Plainview (Irwin 1971). They are very thin (<5 mm) with half-moon or plano-convex cross-sections. These points expand slightly from the base to a maximum width at or above mid-point. Bases are shallowly concave with small pointed ears and inwardly rounded basal corners rather than fishtails. Instead of fluting, they have short, often multiple, basal thinning. Surface flaking consists of a shallow, unpatterned retouch. Of all LPI points, these most closely resemble fluted points and particularly, the Crowfield type. They differ from Crowfield points only in the lack of fluting, the dominance of plano-convex cross-sections, being much narrower (<25 mm) and having less expansion of the side edges from the base. On this basis it is suggested Holcombe represents the earliest of LPI assemblages and is a direct development out of Crowfield just after 10,400 B.P. (Figures 3.1 & 3.4).

Hi-Lo points (Figure 3.13) are thick (7-10 mm) forms with large, flaring, rounded ears. They often have plano-convex sections and exhibit slightly stemmed haft ends (Figures 3.13a-d, etc.). Typically, these points are resharpened and recycled in a myriad of ways. In contrast to Holcombe and EPI point forms they not only have tip impacts and tip resharpening indicating use on projectiles or stabbing spears but often, are extensively resharpened along the lateral edges suggesting other uses as "knives" (Ellis and Deller 1982). Prior to this resharpening, the points have well-defined stems and convex blade edges. As the lateral edges are dulled through use and resharpened, they become more straight and eventually concave such that the shoulders demarcating the stem are removed (Figures 3.13e,f and 3.14). A distinctive aspect of this resharpening is that it involves alternate edge-beveling. One lateral edge is resharpened primarily from one face resulting in a bevel. Then, the point is rotated such that the opposite edge is resharpened by beveling on the other face. If continued, this resharpening results in a point with a hexagonal or "twisted" cross-section (Figure 3.14b,c).

Besides the distinctive resharpening, Hi-Lo points are often recycled into very different tool forms used in other tasks. Some are recycled into drills (Figure 3.13p) while others are made into end scrapers (Figure 3.13r,s). Some are recycled into gravers, side scrapers (Figure 3.13m,n) or "spokeshaves." Still others are extensively beveled along only one side (Figure 3.13o) suggesting some form of specialized, non-projectile use.

In general then, Hi-Lo points are heavy duty, multi-purpose tools in contrast to previously described point forms. As a result, they are more frequently recovered as "complete" forms on occupation sites rather than as the snapped bases often produced through projectile use. They are similar to Holcombe points in terms of shallow basal concavities, basal thinning, the nature of the flaking and plano-convex sections. Thus, it is possible Hi-Lo assemblages represent a development out of Holcombe. In fact, throughout southern Ontario and adjacent areas such as Northern Ohio (Payne 1982a), there is a widespread form of point which for convenience, we will refer to as "Holcombe-like" (Figure 3.12c-d). In the lack of stems and alternate beveling, these resemble Holcombe points. However, unlike Holcombe and like Hi-Lo points, they are quite thick and have slight ear-flaring. In other words, they appear to be intermediate between Holcombe and Hi-Lo and are suggestive of a transitional form.

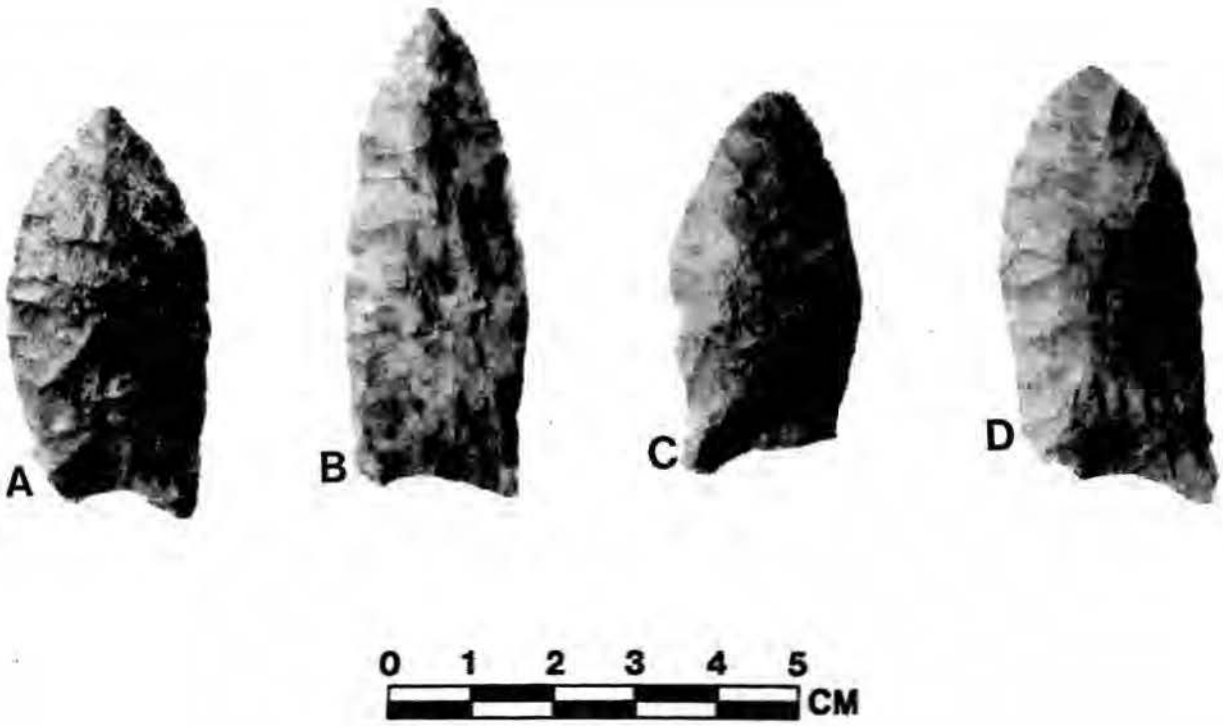

FIGURE 3.12: Holcombe (A-B) and Holcombe-Like (C-D) Points.

Hi-Lo assemblages have not been directly dated. In terms of the recycling forms, the slight stems and the alternate beveling as well as other aspects of the tool kit, Hi-Lo closely resembles the Dalton complex of areas south of the Great Lakes (Ellis and Deller 1982). Dalton dates to ca. 10,300 to 9900 B.P. (Goodyear 1982) and a similar age is suggested for Hi-Lo. They are not totally identical to Dalton materials. For example, Dalton points have serrations while Hi-Lo points lack this feature. Moreover, the Hi-Lo tool kit appears to lack some tool forms associated with Dalton points such as the hafted, flaked adze.

The second class of LPI points lack concave bases and we will refer to these as "Lanceolate" forms. Three categories of these points can be recognized and with additional research, may be elevated to type status. The first includes unstemmed lanceolates (Figure 3.1). These are elongated, *relatively* thick forms with convex bases and lateral edges. Maximum width occurs at or slightly above mid-point. They lack basal thinning. Flaking is well-executed and consists of the unpatterned removal of small, roughly parallel-sided, shallow flakes. Cross-sections are a flat bi-convex or lens-shaped although some items have a slight medial ridge on one face. These forms have been compared to Agate Basin points of western North America which date to ca. 10,200 to 9900 B.P. (see Deller 1976b; Ellis and Deller 1986; Frison and Stanford 1982).

The second category consists of lanceolates with a heavily ground stem which contracts towards the base (Figure 3.1). The stems are demarcated from the blade segments by slightly developed shoulders. They have flat bi-convex cross-sections and convex bases. Flaking is shallow and unpatterned. On the stem, the flake removals are small and roughly parallel. The fore-sections exhibit broader scars with edges regularized by a fine, intermittent flaking. These points are similar to the Hell Gap points of the West (see Deller 1976b; Ellis and Deller 1986; Frison 1974, 1982; Frison and Stanford 1982; A. Stewart 1983). In the West, Hell Gap succeeds and probably develops out of Agate Basin around 9900 to 9500 B.P. It is possible that the unstemmed and stemmed lanceolates from Ontario represent a similar sequence of about the same age (see Ellis and Deller 1986). As such, they would be contempo-

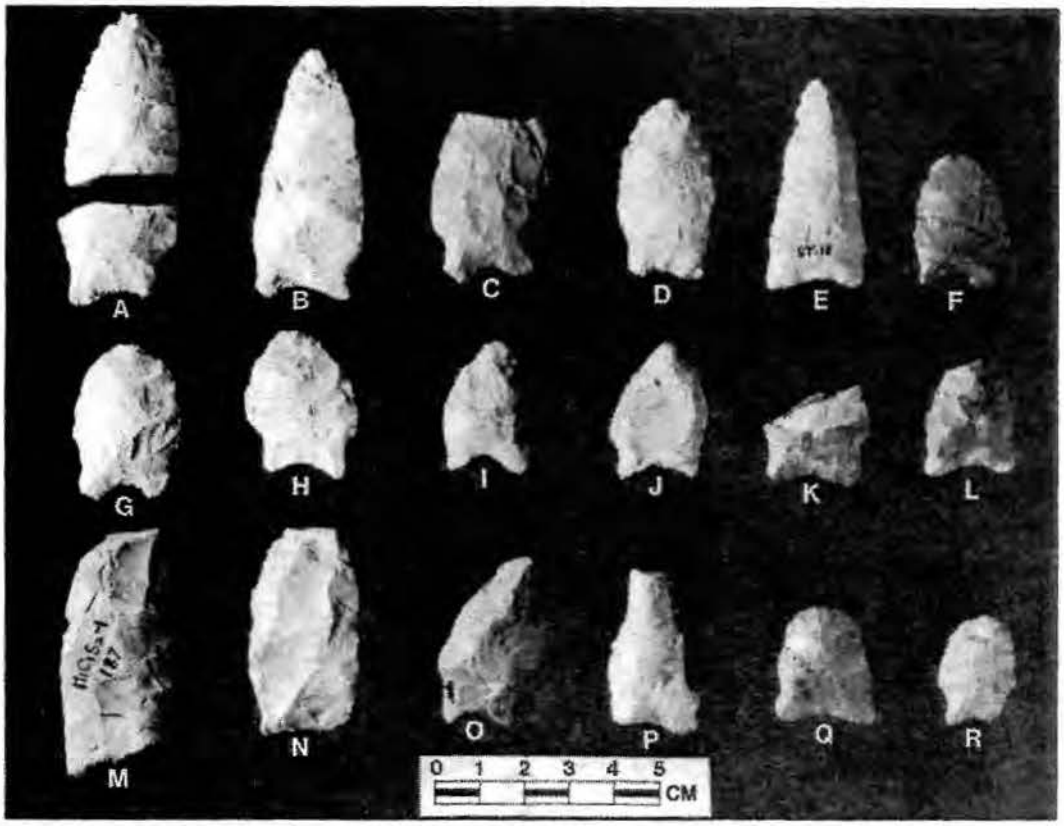

FIGURE 3.13: Hi-Lo Points. M-O are reworked into side scrapers; P is reworked into a "drill"; Q-R are reworked into end scrapers.

rary with the concave-based forms noted earlier (see below) as well as with Early Archaic manifestations (see next chapter).

The final Lanceolate form consists of narrow, roughly parallel-sided points with straight bases (Figure 3.15). They exhibit narrow, relatively deep flaking which consists of the patterned removal of parallel-sided flakes. These forms are rare and are reported only from the very easternmost part of southern Ontario at sites such as Thompson's Island in the St. Lawrence River Valley (Ritchie 1969:18-19). They appear to be part of a widespread LPI manifestation found in a narrow band extending from eastern Ontario through southern Quebec, northern New England and the Maritimes (see Doyle et al. 1985) and may date much later than the other forms discussed. As a result of their rarity in southern Ontario and uncertain affiliation, they will not be discussed further here.

Other Tools

Generally, the remainder of LPI tool kits include items found on earlier sites and clearly indicate continuity. For example, among Hi-Lo assemblages, forms found earlier continue to appear, including unfinished points or preforms, backed "knives", gravers, side scrapers including concave forms (some with gravers) and beaked items, some of which were hafted (Figure 3.16). There are a few suggested differences. Occasionally, blunt-bitted drills occur (Figure 3.16b) which appear to be lacking on earlier sites. Another suggested contrast is in end scrapers. Triangular forms, including those with spurs are recovered (Figure 3.16f, g; Ellis and Deller 1986: Figure 5). However, most end scrapers associated with Hi-Lo (Figure 3.16h-l), Holcombe (Ellis and Deller 1986:43-44; Fitting et al. 1966: Figure 8) and Lanceolate forms (Dibb 1985: Plate 5) appear to be spurless, very small and snub-nosed to thumbnail to fan-shaped in outline.

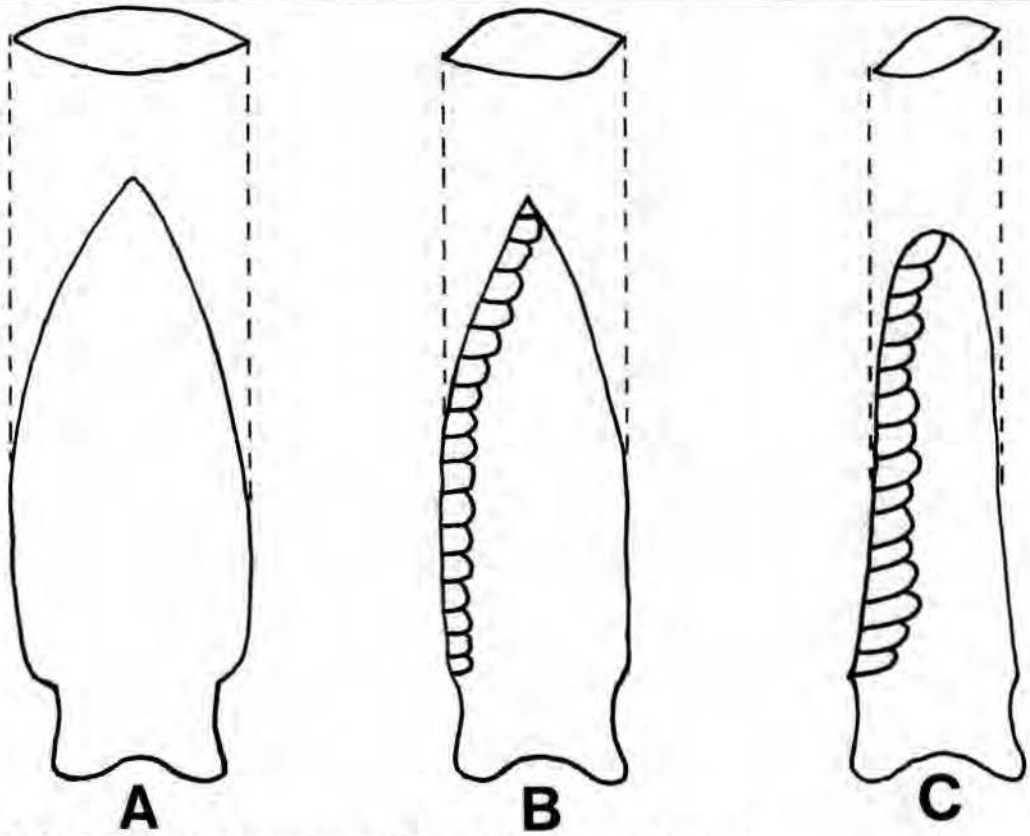

FIGURE 3.14: Effects of Resharpening on Hi-Lo Point Outlines and Sections.

Site Characteristics

LPI sites occur throughout southern Ontario. Moreover, one would expect they occur on the bed of certain modern lakes since water levels were generally below that of modern levels. A good example is in the Huron basin where water levels at this time resulted in only the very small Lake Stanley in the centre of the modern basin (Karrow and Warner, this volume). Sites tend to be in locations comparable to those of earlier sites. These include well-drained, elevated areas with southern exposure overlooking lower, more poorly drained areas. The latter situations frequently occur on abandoned shorelines including that of Algonquin (Deller 1976a; Dibb 1985; Ellis and Deller 1986; Storck 1979, 1982, 1984b). As with the earlier sites, it is probable that environmental diversity and, consequently, resource diversity attracted groups to these locations since, as a whole, the environment would have been largely a more closed boreal forest dominated by pine during this time period. However, this is an oversimplification as spruce woodlands appear to have persisted in some more northerly areas (e.g. McAndrews 1985) and at the same time, deciduous elements would probably have been increasing in more southerly locations (A. Roberts 1984). Storck (1984b) has specifically suggested that the drained Algonquin lakebed would have supported a more open vegetation which could have been attractive to game such as moose, deer and elk. However, some have also suggested that reliance on caribou continued (e.g. Dibb 1985) and indeed, caribou remains were recovered from the Holcombe site in Michigan (Cleland 1965).

Most LPI sites in southern Ontario appear to be small camps or way-stations like their predecessors. However, at least one lithic resource exploitation site is known, associated with the Hi-Lo use of Haldimand chert sources (Allan site; R. Parker 1986a, 1986b). There are occasionally larger sites such as Deavitt (Dibb 1985) and Welke-Tonkonoh (Ellis 1981; Ellis and Deller 1982). These consist of several (5+) discrete artifact concentrations distributed over an area up to 5 ha. However, none reach the very large sizes reported at EPI sites described earlier

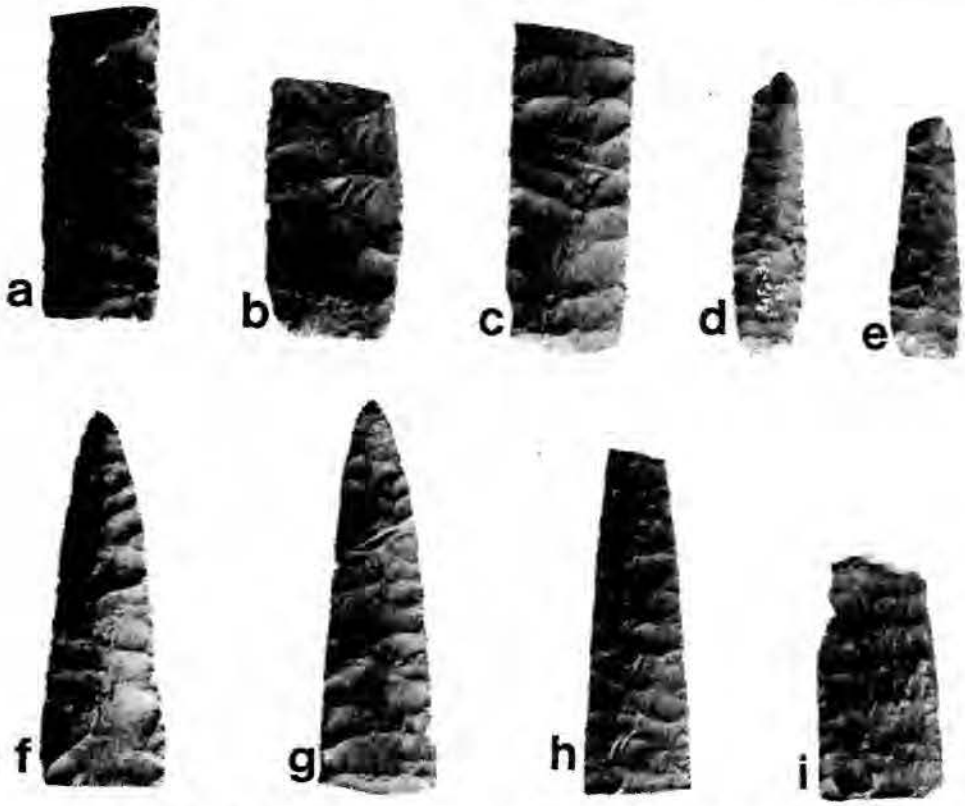

FIGURE 3.15: Lanceolate Points and "Drills" (D-E), Thompson's Island Site. Length of A is 51 mm. Courtesy of Dr. James V. Wright and the Canadian Museum of Civilization, Ottawa, Ontario.

such as Fisher. Moreover, even the larger LPI sites appear to have limited and less concentrated debris compared to earlier times. LPI sites representing certain manifestations such as Holcombe and the later Lanceolate-associated assemblages tend to be quite rare. Hi-Lo sites and findspots are an exception. These are relatively common versus those of the other LPI manifestations and mirror a trend seen in the comparable Dalton materials farther south.

Although LPI material occurs over southern Ontario as a whole, there are suggestions that specific manifestations are more restricted geographically. Holcombe or Holcombe-like material appears to be the most widespread (Figure 3.10) and similar, but not totally identical point forms even occur in Northern Ontario (e.g. MacNeish 1952b). Given this distribution, it is perhaps no surprise that almost all known major chert types were used to some extent for tool manufacture. In contrast to Holcombe, Hi-Lo materials are primarily situated in more southerly locations including southwestern Ontario and along the north shore of Lake Ontario south of Rice Lake (Figure 3.11). They are only rarely reported in more northerly locations (e.g. Dibb 1985:196-197) and certainly are less dense in those areas. Lanceolate materials seem to be distributed in the reverse to Hi-Lo. In fact, definite sites are reported almost solely in areas near and to the north of the Lake Algonquin strandline (Figure 3.11). The only exceptions are a few small sites more to the south near Rice Lake (Jackson 1986a: Figure 4g-h). Unstemmed forms are actually reported only from the area of the modern southern Huron basin but the contracting stemmed forms occur across the whole northern area (Dibb 1985; Ellis and Deller 1986; A. Stewart 1983).

As noted earlier, age estimates suggest the later concave-base forms such as Hi-Lo and the Lanceolate forms are contemporary to some degree. The relatively exclusive distribution of these may suggest also that they are contemporary and represent geographic variation. To some extent, the use of southern stone materials such as Haldimand only in Hi-Lo and northern materials such as Collingwood and Balsam Lake only in Lanceolate assemblages

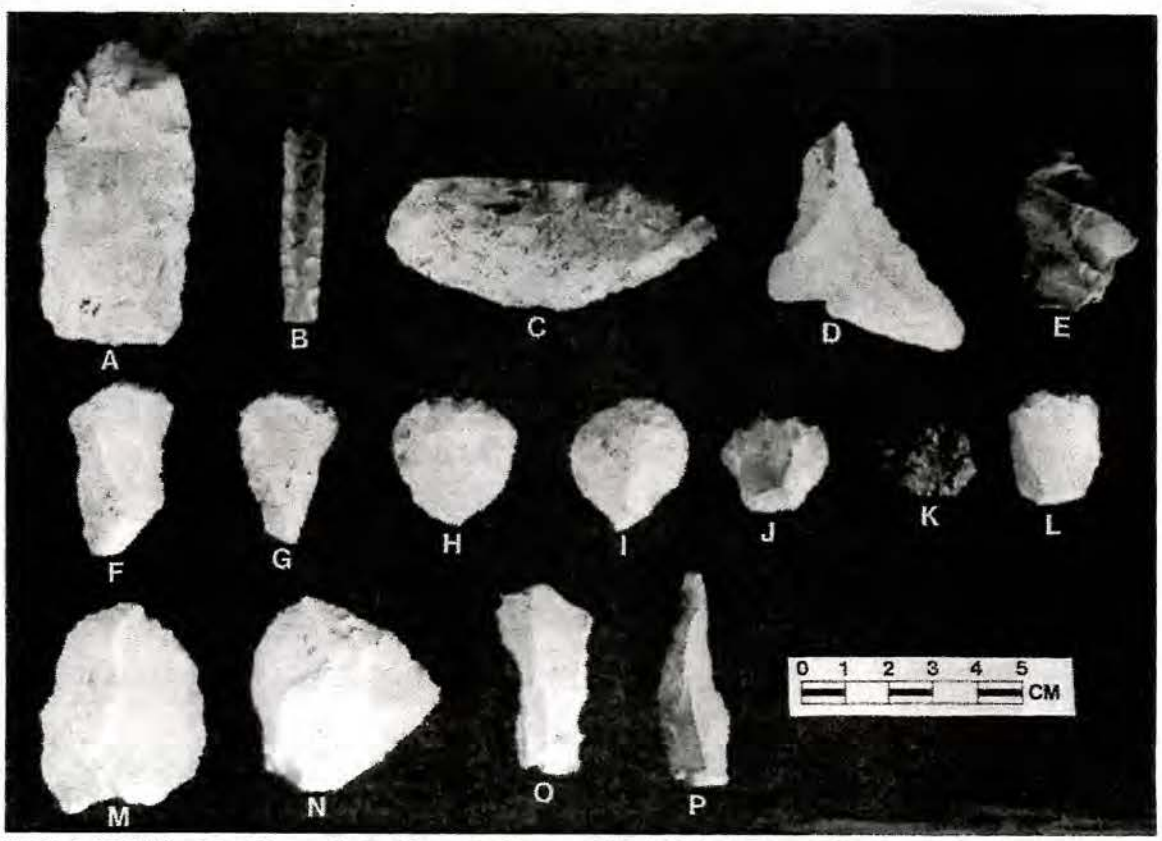

FIGURE 3.16: Hi-Lo Tool Forms A: Preform; B: Stemmed "Drill"; C: Backed Biface; D-E: Borers or Gravers; F-L: End Scrapers; M-N: Side Scrapers; O: Spurred Concave Side Scraper; P: Hafted Beak or Perforator.

mirrors this same dichotomy. However, there are some exceptions, notably the use of Onondaga by both Hi-Lo (Ellis and Deller 1982) and Lanceolate (A. Stewart 1984: Table 4) groups. If contemporary, and if this spatial dichotomy is real, then it is possible that both developed from the same Holcombe or even fluted point base and differentiated due to environmental differences with southern manifestations in an increasingly deciduous vegetation cover and northern Lanceolate-producing groups in areas where more open spruce or closed pine forest continued. Alternatively, Hi-Lo could have developed in situ out of Holcombe while the Plano forms with their more western resemblances could represent an intrusion of peoples into the new, more open and extensive environments made possible by the draining of Lake Algonquin. This would have exposed much new area for habitation. This is largely speculation but is certainly worthy of further investigation.

Lifeways of Late Paleo-Indian Groups

If anything, the lifeways of LPI groups in southern Ontario are more poorly known than their predecessors. There are clear suggestions that certain trends continued. For example, raw material preferences suggest the continuing exploitation of relatively large territories, while the ephemeral and limited nature of most sites suggests low population densities. However, while large territories continued to be exploited, there are suggestions these were smaller than those exploited by earlier groups. Whereas EPI sites have been found over 300 km from the stone sources employed, at known LPI sites, 200 km seems to be the maximum distance between sites and the sources. Moreover, at least Hi-Lo sites and findspots are relatively common in comparison to EPI sites. This increase may

suggest growing populations. It is possible that this inferred population growth is a product of increasing biotic productivity as the deciduous vegetation component may have been increasing in southern areas where Hi-Lo primarily occurs. In any case, the predominant rarity of sites and the indications of relatively large territories exploited over a yearly cycle suggests certain other inferred aspects of EPI lifeways continued such as the absence of tool-making specialists, the lack of a heavy reliance on food storage and the practice of gift exchange in order to maintain social ties.

Conclusions

In the past 15 years, increasing attention has been focused on the earliest occupants of southern Ontario. Despite a lack of faunal preservation and absolute dates from known sites, the result has been a clearer picture of these groups. We now have a good understanding of certain basic aspects of Paleo-Indian sites in terms of their size, organization, locational preferences and overall distribution. Knowledge of stone tool kits, stone manufacturing techniques and lithic source preferences has improved drastically, as has our understanding of the relative age of the occupations and suggested changes through time. Our knowledge of what Paleo-Indian life was like and why it was that way is still limited. Nonetheless, the emerging picture is of groups at low population densities who were residentially mobile and exploited large territories during annual cycles of resource exploitation. The nature of the existing environments suggests these groups depended largely on game rather than plant foods, although use of the latter may have increased through time as deciduous elements increased in the vegetation cover. In EPI times at least, caribou are suggested to have been a major game animal exploited and are believed to account for certain aspects of the archaeological record. An example is the occasional very large site representing population aggregation to carry out communal hunting activities. However, it seems certain that other game animals were also taken. In order to cope with the problems of variable environments of low productivity, there are suggestions contacts were maintained over a wide area beyond that of local groups. It seems probable that mechanisms such as gift exchange in lithics were employed for that purpose.

Acknowledgments

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CHAPTER 4

THE ARCHAIC

Chris J. Ellis, Ian T. Kenyon & Michael W. Spence

Definition

"Archaic" is a term first consistently applied to northeastern North American archaeological manifestations by W. Ritchie (1932a, 1932b, 1936, 1944). Subsequently, others have employed the term to similar materials throughout eastern North America and beyond. As originally used, the "Archaic" designation was applied for all pre-agricultural (e.g. hunter-gatherer-fisher) assemblages including or alternatively, lacking, certain artifact forms. The absence of pottery was particularly stressed. Since the initial formulation of the concept, there continues to be much debate on how the term should be employed. Today, however, most investigators conceptualize the Archaic in two basic ways.

First, the Archaic has been defined in terms of assemblage content and the nature of the site record. Defining traits of this nature are listed below. It should be emphasized that most of these characteristics largely serve to distinguish Archaic materials from those of Paleo-Indian assemblages. In sum, many of these traits continue into the succeeding Woodland (see next chapter). Although there are some other minor differences, the major contrast with at least the earliest Woodland assemblages is an absence of ceramics -- a somewhat arbitrary distinction. In essence, from an artifact/site characteristic perspective, the Archaic is used simply to refer to non-Paleo-Indian manifestations pre-dating the introduction of ceramics.

Traits seen as characteristic of the Archaic include:

1) a reliance on a wide range of lithic raw materials in order to make stone artifacts. Less flakable materials such as quartz, quartzite, sub-greywacke or "argillite", slate and other materials become more widely used, particularly in the manufacture of more highly "shaped" tools such as points. Moreover, there is an increased use of more localized stone sources including secondary deposits in glacial till and river beds and a decrease in the use of more exotic stones derived from distant sources;

2) the presence of stone tools shaped or manufactured by grinding and polishing the raw material into shape. This practice contrasts with the almost exclusive use of flaking to manufacture stone tools seen in Paleo-Indian assemblages;

3) the appearance of certain distinctive stone tool forms lacking in Paleo-Indian contexts. Particularly stressed are the presence of: point forms having notched or markedly stemmed haft elements; notched pebbles used as net-sinkers in fishing activities; items used in the processing of plant foods such as grinding stones or manos, mortars and "pitted" stones; and ground stone tool forms to be described in more detail below such as axes, celts (ungrooved axes), chisels, adzes, gouges, bayonets, stone plummets and bannerstones;

4) an increase in the use of less portable, massive tools over Paleo-Indian times. Stressed here are large wood-working tools such as the axes, gouges, and adzes noted above;

5) a *flaked* stone tool kit consisting predominantly of briefly used items lacking extensive flaking for purposes of shaping or as a product of resharpening. Indeed, except for the odd hafted tool forms such as points, drills and end scrapers, extensively flaked tools such as the side scrapers found in Paleo-Indian assemblages are rare to non-existent;

6) a decrease in the care and skill lavished on the production of chipped stone tools from Paleo-Indian times;

7) the manufacture and use of a wide range and large number of bone tools. Particularly emphasized are a plethora of items used in fishing activities such as fish hooks, gorges and harpoons. It should be stressed that the lack of bone items on earlier Paleo-Indian sites is undoubtedly emphasized due to preservation problems. Thus, this contrast may be more apparent than real;

8) an absence, except for a minor use during the very latest dating assemblages, of the smoking pipes found on Woodland sites;

9) more pronounced regional variability in both the nature of assemblages and in site characteristics versus the Paleo-Indian manifestations which are seen as relatively homogeneous over large geographic areas;

10) the appearance in Ontario and environs of tools made on Native copper;

and 11) a marked increase in the number and variety of sites. Archaic sites are more common than those of Paleo-Indian and can yield larger artifact assemblages and include relatively extensive garbage dumps or middens. These changes suggest the general trend was for population increases through time. Moreover certain kinds of sites absent in Paleo-Indian times appear, such as cemeteries.

A second way in which the Archaic has been conceived is in terms of characteristics of subsistence practices and economies inferred from the site/artifact traits enumerated above. In other words, this "definition" is actually an explanation for certain contrasts between Archaic and other assemblages. As implied earlier, the Archaic was initially conceived of as including those groups who subsisted by hunting and gathering prior to the adoption of horticulture and ceramics. There are several problems with this initial formulation. For one thing, we now know that ceramic producing groups were present in some areas who were non-horticulturalists. Furthermore, there is growing evidence that some "Archaic" groups south of the Great Lakes were involved, albeit marginally, in cultivating items such as weedy plants, squash and gourds (Crawford 1982; Yarnell 1976). Leaving these problems aside, another major problem with the earliest concepts of the Archaic was the subsequent recognition of other aceramic hunter-gatherers in the Northeast; namely, Paleo-Indians.

In order to explain the differences between Paleo-Indian and Archaic hunter-gatherers, other explanations have been developed. One, which tends to be very popular, is based on the stereotype of Paleo-Indians as hunters, constantly involved in the chase of large, often regionally or totally extinct, game animals (see previous chapter). The focus on this large game provided a common subsistence base which cross-cut, and let colonizing Paleo-Indian groups spread rapidly across, what were otherwise very diverse environmental zones (Mason 1981:107; Stoltman and Barreis 1983:254). Given this stereotype, the Archaic became conceived of as a time in which groups settled in and became more familiar with local resources. In doing so, they broadened their resource base and began to exploit a range of food products previously ignored. This more thorough and intensive exploitation of locally available resources is often regarded as indicating an increase in "efficiency" of resource procurement (see Caldwell 1958).

Evidence of this economic transition is the appearance on Archaic sites of specialized resource procurement and processing tools absent in earlier contexts. These include items used not only in the procurement and processing of food products such as an elaborate fishing technology or implements used in the processing of plant foods, but also, implements used in obtaining other resources necessary to make a living. The latter include the appearance of heavy wood-working tools which are useful in shelter construction and the production of a wide range of other objects such as transportation aids. In turn, more intensive and extensive exploitation of local resources, combined

with a focus on less mobile resources than big-game, favoured: 1) population increases as seen in the larger number and size of sites; 2) decreases in the sizes of territories exploited as evident in, for example, decreasing use of "exotic" stone materials; 3) longer occupations at seasonally occupied sites and consequently, a reduced number of residential moves throughout the year, as is indicated by larger sites, the presence of less portable tool kits, the appearance of sites with several interments, etc.; and 4) increasing regional variability since the local resources vary from area to area and can require very different technologies and social formations in order to be thoroughly exploited.

The view of the Archaic as simply representing a broader-based economy than that of Paleo-Indians continues to persist. However, it is clear that this viewpoint is not sufficient. As noted in the previous chapter, Paleo-Indian groups exploiting the Late Glacial environments of the Great Lakes area may have focused on large game as an important aspect of subsistence because the existing environments did not provide many other alternatives. Thus, a broadening of the resource base between Paleo-Indian and Archaic probably did occur in that area. However, the same can not be said for other areas such as the southeastern United States. Environmental reconstructions for that area suggest larger game were not present in any quantity and the nature of the Paleo-Indian site record itself suggests a more diverse economy including not only deer and smaller mammals but also, plants and fish (see Brose 1978a:729; Meltzer 1984; Meltzer and Smith 1986). Furthermore, many groups which most would classify as "Archaic" probably obtained much of their subsistence base from a limited range of resources comparable to Paleo-Indian groups in the Northeast and more restricted than that of Paleo-Indian groups in the Southeast. For example, in the Shield Archaic of Canada's northland, fish and caribou were probably the mainstay of the diet (J. Wright 1972a:33-36, 1972b).

Given these considerations, as well as the fact subsistence bases may not distinguish Archaic groups from the earliest succeeding Woodland groups in at least Ontario, we prefer to define the Archaic in terms of artifact content and site characteristics as outlined earlier. However, even this more limited and simple characterization is not without problems, as should become clear in the following.

Age

In the Great Lakes area, the introduction of ceramics occurred around 2800 to 2900 B.P. (see Spence et al.: this volume) and provides a convenient, although arbitrary, minimum age estimate. Setting a boundary on the maximum age of Archaic manifestations is also somewhat arbitrary. When the Archaic was first conceived of as an organizing device, the available data providing a definition were derived from manifestations which date relatively late (i.e. 5500 to 2800 B.P.). In these later manifestations, all of the traits of Archaic assemblages noted above were present. However, continuing research has indicated these traits did not appear all at once. Rather, these traits were gradually added through time. For example, the introduction of ground stone tools pre-dates the appearance of cemeteries. Therefore, providing an initial date for the appearance of the Archaic must be somewhat arbitrary. We have chosen to begin the Archaic with the introduction of those items listed above which are the first to appear in the archaeological record; namely, notched points. Moreover, in contrast to some traits noted above, few dispute notched points as an Archaic trait (for exceptions, see Gardner 1977; Griffin 1977:10). Present evidence suggests these points came into use around 10,000 B.P. Hence, an age range of approximately 10,000 to 2800 B.P. covers Archaic manifestations as the term is used herein.

The above suggests the Archaic existed for a considerable period of time. As such, it proves unwieldy for discussion and organization, particularly since Archaic assemblages and adaptations were not stable throughout that time span. In order to overcome this difficulty, most investigators divide the Archaic into smaller time units, following the work of Fowler (1959) who recognized an Early, Middle and Late Archaic. There are differences among workers on where to draw the boundaries between these subdivisions. For example, some would place the beginning of the Late Archaic at 6000 B.P. (e.g. Funk and Rippeteau 1977:28; Fowler 1959) while others use a 5000 B.P. date (e.g. J. Brown and Vierra 1983:165; Jefferies 1987:35) and still others imply a 4500 B.P. inception date (e.g. Lovis 1989). In general, this variation reflects the fact that drawing a single time line uniformly across the diverse Northeast/Mid-west will always divide up very arbitrarily in one or more localized areas what is essentially a cultural continuum through time. In order to minimize this problem, we have chosen to use time distinctions which, at

least in southern Ontario, do seem to correspond to relatively major changes in the archaeological record. For our purposes, the Early/Middle Archaic boundary will be drawn at 8000 B.P. and the Middle/Late Archaic juncture at 4500 B.P. (see Figure 4.1). Of course, it is possible to recognize even finer Archaic manifestations than those delimited by the simple division into Early, Middle and Late, and these will be discussed below.

Early Archaic (ca. 10,000 to 8000 B.P.)

Background

Until recently, it was assumed that there was an *extreme* paucity of Early, as well as the earliest Middle, Archaic sites throughout the Northeast. Moreover, it was argued this rarity was related to the nature of the environments existing at the time. Both Fitting (1968b) and W. Ritchie (1969, 1971a) suggested that the closed, less diverse, conifer-dominated vegetation cover of the pine zone (see chapter 2) had a low carrying capacity. As with modern analogues of these vegetations, it was suggested that there were few edible plant species and a paucity of large game animals. Hence, populations were expected to be small and dispersed.

While it seems certain that population levels were lower in the Early Archaic than in succeeding times, as J. Wright (1978) has emphasized, it is becoming clear that at least in southern Ontario, there is no extreme paucity of finds attributable to the Early Archaic. Indeed, in Ellis' site survey experiences in southwestern Ontario, finds assignable to specific Early Archaic manifestations such as the corner-notched horizon (see below) are more frequently encountered than Early Paleo-Indian finds. This is also the case in surrounding areas such as along the north shore of Lake Ontario (A. Roberts 1985), and in northwestern Ohio (Payne 1982a). The infrequency of Early Archaic finds has probably been overemphasized in the past due to a combination of several factors.

First, and simply, few investigators have specifically attempted to find and document Early Archaic sites. Indeed, most research on these occupations is a recent development, stimulated largely by J. Wright's (1978) work. Second, and in general, investigators tended to be unfamiliar with what Early Archaic materials looked like outside of some very distinctive forms such as bifurcate-based points (see below). Third, during the time of the Early Archaic occupations, the levels of the Great Lakes were uniformly and often much below modern lake levels (Karrow and Warner: this volume). Thus, it is certain that many sites are now in areas inundated by the modern lake configurations. Fourth, and by extension, throughout prehistory lake shore margins have been attractive to human occupation. These margins and immediately adjacent areas are attractive for several reasons, not the least of which are the abundant foodstuffs such as fish and waterfowl (see Mason 1981:131-132). Therefore, we might expect intensive occupations and larger sites to have been concentrated specifically in areas now under water. Fifth, at least in some areas, such as in the southern Huron basin area, post-Early and Middle Archaic water levels were much higher than modern levels during the time of the Nipissing transgression (Karrow and Warner: this volume). This inundation must have buried and/or destroyed some sites. Finally, some have suggested that the forests during this period may not have been as impoverished in food resources as previously believed. Rather, it is argued that the vegetation covers may have been more open and richer in deciduous elements than has been emphasized in the past (e.g. A. Roberts 1984:250; J. Wright 1978:69). In any case, it is true that during this time period many species represented in the modern vegetation cover first invaded the area, so that an essentially modern vegetation community was established by about 8000 B.P. Regardless of quantity, it is certain that the animal species available for exploitation were modern in form and included only a very few species which were totally or regionally extinct at the time of European contact.

Early Archaic finds then are much more common in Ontario and surrounding areas than previously believed. They have now been reported throughout southwestern Ontario as far north as the Lake Huron basin region (Deller et al 1986). Finds are also known along the north shore of Lake Ontario as far east and north as Rice Lake (L.J. Jackson: personal communication; A. Roberts 1985). There is some indication that Early Archaic materials are much more common in more southerly areas such as the Lake Erie vicinity and diminish in frequency as one moves north (J. Wright 1978). This distribution may be a product of the fact that at least the earliest of these Archaic

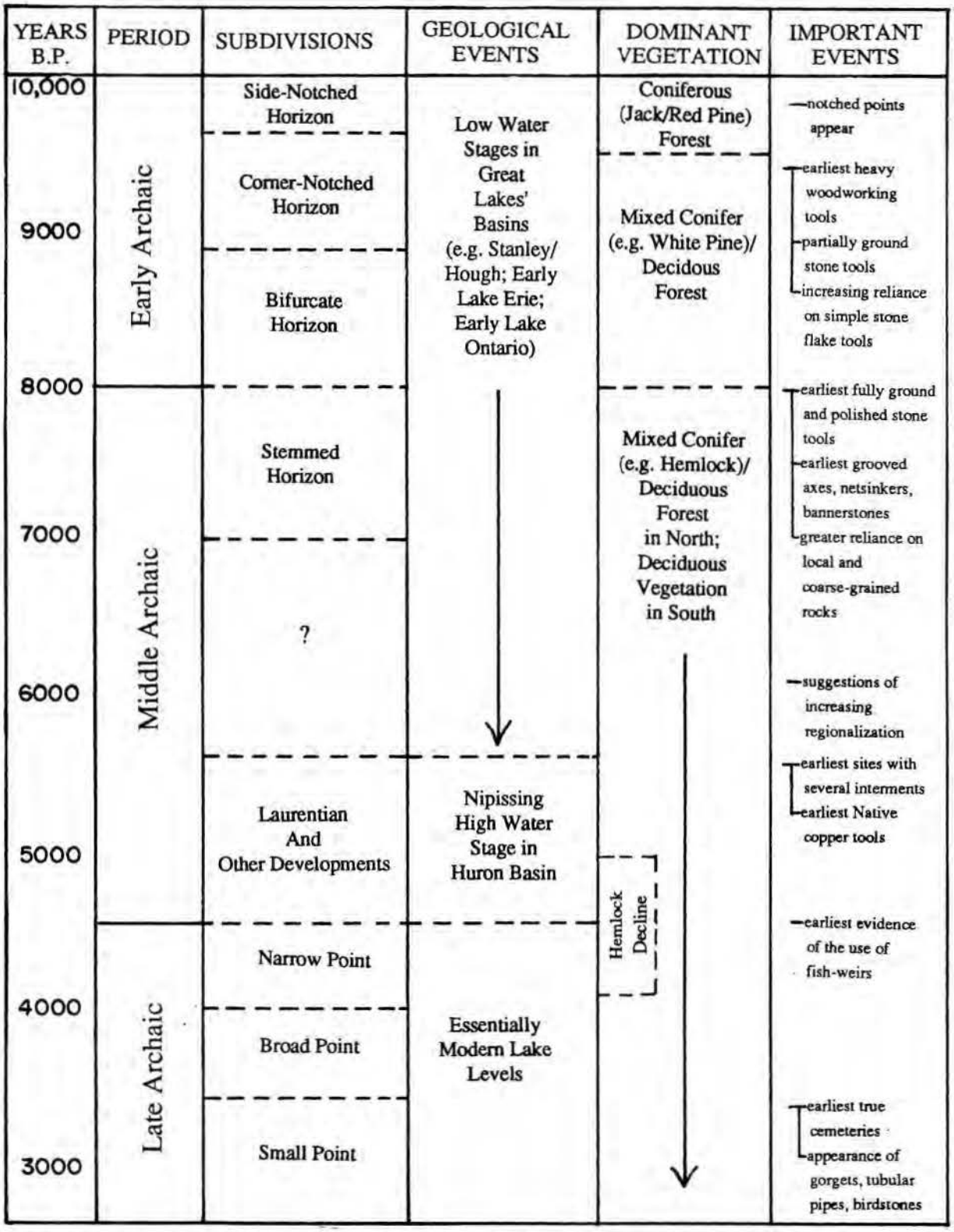

FIGURE 4.1: Age, Environmental Associations and Characteristics of Archaic Assemblages.

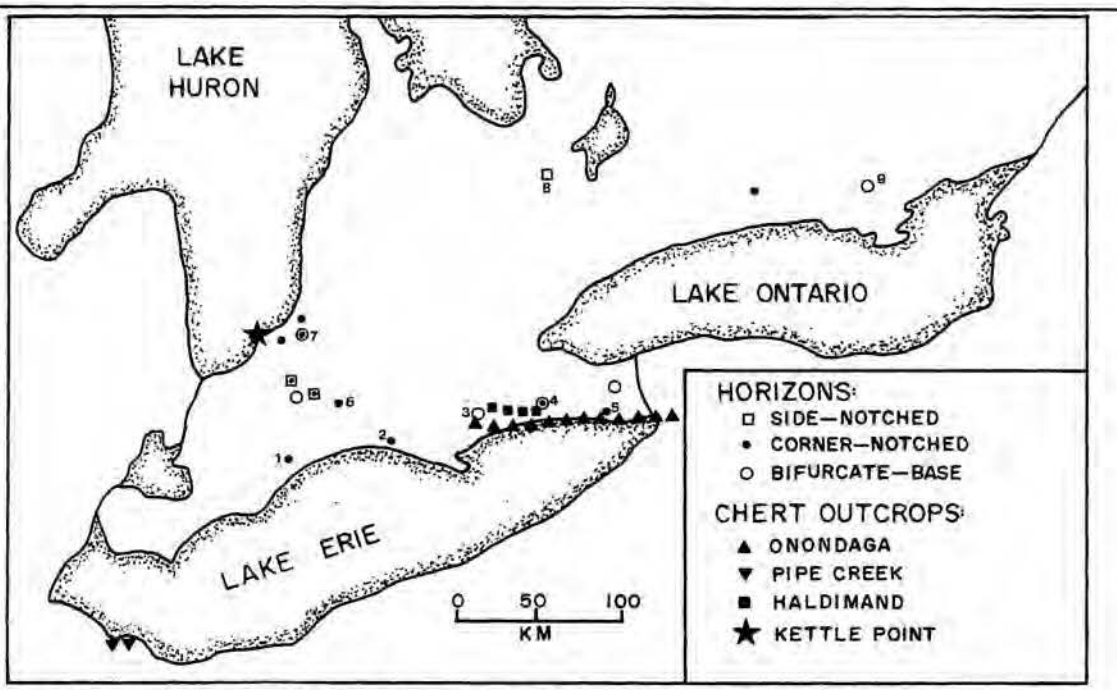

FIGURE 4.2: Location of Some Early Archaic Sites and Chert Outcrops. Sites: 1) Nettling; 2) Jaegers; 3) Slack-Caswell; 4) Allan; 5) Port Colborne Quarry; 6) Brodie; 7) Parkhill; 8) Coates Creek; 9) Morrow.

groups were probably contemporary with Late Paleo-Indian groups to the north producing assemblages containing lanceolate points. In fact, at a number of sites in the upper Great Lakes area lanceolate points have been recovered in association with the odd notched point form (e.g. Greenman 1966; Mason and Irwin 1960). To some this indicates contemporaneity and presumed interaction between Late Paleo-Indian and Early Archaic groups (e.g. Mason 1981:121).

Very few of the known sites have been examined in detail. Some limited test excavations have been carried out at sites such as Allan (R. Parker 1986a, 1986b) and Nettling (see Figure 4.2). For the most part, Early Archaic sites appear to be very small. An exception is the Nettling site near Lake Erie (Figure 4.2), located by Mr. Stanley Wortner and currently under investigation by Mr. Wortner and William Fox (1980c and personal communications). Through surface collection, this site has yielded ca. 1500 tools and preforms. Although in a plowed field, there is little evidence at Nettling of occupations other than those of the Early Archaic.

Early Archaic Horizons

The lack of excavated assemblages and materials in good contexts from southern Ontario limits inferences on the Early Archaic largely to questions concerning the age and the nature of the stone tool kits. Moreover, even discussions of these basic aspects such as site age must rely heavily on data from elsewhere where good contextual information is available. This task is facilitated by the fact that developments within the Early Archaic seem to have been very similar over much of eastern North America (J. Chapman 1975, 1980; J. Tuck 1974). This is especially the case with regard to the nature and kinds of artifacts produced. In other words, the *pronounced* regional artifact variability which is so closely associated with the concept of the Archaic is not easy to document in its earliest manifestations.

At least three major, time-sequential, Early Archaic manifestations can be recognized in eastern North America. Those investigators who emphasize the broad spatial distribution of particular manifestations about the same time have referred to them as "horizons" (J. Tuck 1974). The term horizon is usually applied to events of a very

short duration. Yet, researchers working in other areas such as the southeastern United States, have begun to recognize time depth to some of these widespread manifestations and can recognize distinct, but relatively minor time-sequential developments in each. Hence, the term "tradition" has also been applied (J. Chapman 1975). While it is possible that future research will be able to recognize similar, finer time distinctions within the assemblages from Ontario, these are not readily distinguishable with present evidence. Thus, the term horizon will be used here despite the fact each manifestation may have considerable time depth.

A major distinguishing criterion of each of these horizons is point form. The names of specific point types recognized in the southeastern United States have been used to label each (e.g. J. Tuck 1974). However, these specific types may be more spatially restricted than the broader horizons of which they are representative. Thus, the horizons will be referred to here solely by a major characteristic of the more widely distributed point styles. From the inferred earliest to latest they will be referred to as: Side-Notched, Corner-Notched and Bifurcated (Figure 4.3). Of these, only the Corner-Notched horizon is well known and it will receive the bulk of the discussion below. Some (e.g. J. Tuck 1974) would also recognize a fourth and earlier horizon characterized by the presence of Dalton or Dalton-like points such as Hi-Lo. Yet, since we have somewhat arbitrarily defined the Archaic as beginning with the appearance of assemblages including notched points, material of that horizon is regarded as Late Paleo-Indian, as was discussed in the last chapter.

Side-Notched Horizon (ca. 10,000 to 9700 B.P.)

Side-Notched points are ubiquitous throughout prehistory, being a dominant form at various times from the Middle Archaic onward. However, there are strong indications of an early horizon characterized by such points in Ontario and areas to the south which initiates the appearance of notched points in the archaeological record. In the southeastern United States these are labelled by various type designations, including: Hardaway Side-notched (Coe 1964:67), Greenbriar and Greenbriar-Dalton (Cambron and Hulse 1965; DeJarnette et al. 1962), Bolen (Purdy 1981: Figure 11), Big Sandy (DeJarnette et al. 1962), Kessel Side-Notched (Broyles 1971:60-61) and San Patrice-st. john's variety (C. Webb et al. 1971). Stratigraphic evidence and C-14 dates suggest this material occurs between Late Paleo-Indian (Dalton or Dalton-like) and corner-notched material just after 10,000 B.P. (Broyles 1971:61; Coe 1964; Dejarnette et al. 1962; Dickens 1986:860).

What may be the earliest of these points share several characteristics with earlier Late Paleo-Indian Dalton and Dalton-like material. These attributes include: base and notch (instead of lateral stem) grinding, basal thinning, a tendency for concave bases, edge-beveling and sometimes, serrations. In fact they appear virtually identical to the earlier material except for the addition of side-notches. For example, several Ontario finds of side-notched points are known which, save for the notching, are identical to the Late Paleo-Indian Hi-Lo points. These notched points even occur on the same materials favoured by Hi-Lo groups, but little used in later times, such as Haldimand (Figure 4.4a,b). These characteristics are suggestive of a clear continuity in technological practices through time. Other Early Archaic side-notched forms are different from Late Paleo-Indian forms in other respects and may be slightly later in time. In Ontario, this may include several finds with squared basal corners and commonly, alternate beveling and serrations (Figure 4.4e,f; see also J. Wright 1978: Plate 2:15).

In general, these side-notched point forms are rarely reported in Ontario and only a few possible sites have been reported (e.g. Coates Creek Site; Storck 1978b). Still, we suspect this is simply a recognition problem as there has been a tendency in the past to lump almost any side-notched point into later Archaic types such as Otter Creek (see below).

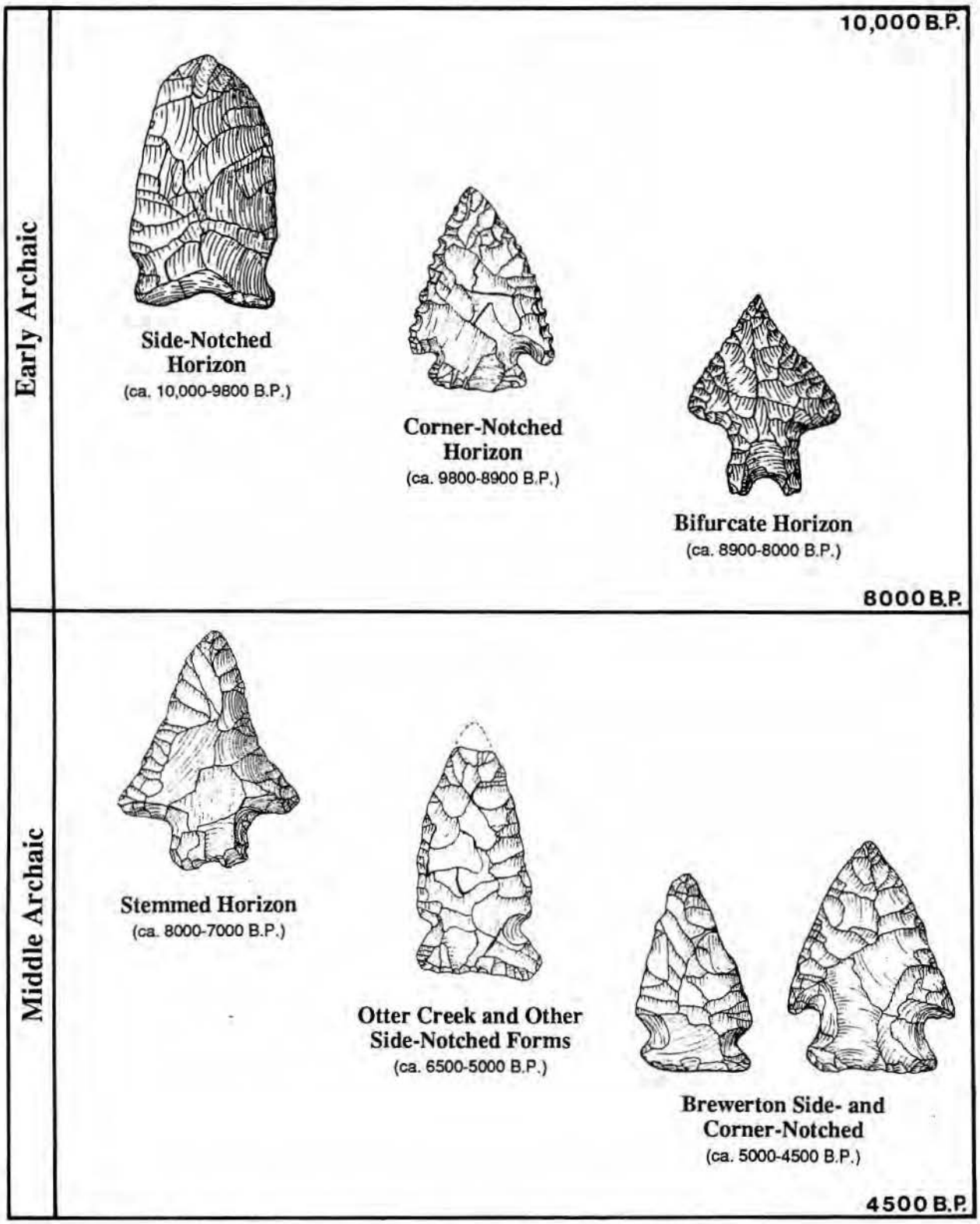

FIGURE 4.3: Early and Middle Archaic Point Styles. Points are shown at actual size.

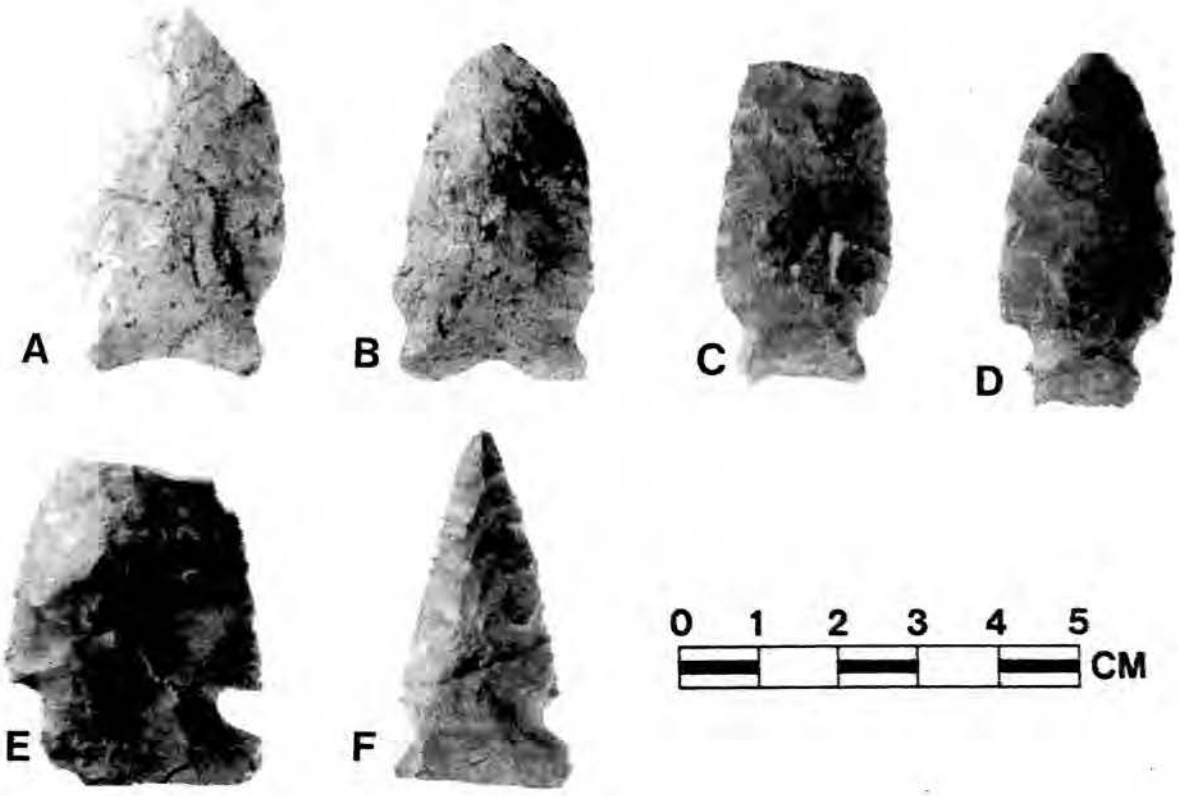

FIGURE 4.4: Probable Early Archaic Side-Notched Points from Southwestern Ontario.

Corner-Notched Horizon (ca. 9700 to 8900 B.P.)

Age and Point Forms

This Early Archaic material is among the best documented throughout eastern North America since it was first reported at the Hardaway site in North Carolina (Coe 1964). The point forms, although going under innumerable type names, are generally referred to as the Kirk corner-notched cluster (J. Chapman 1976). Several sites are known where materials representative of this horizon occur in well-dated stratified sequences (Broyles 1971; J. Chapman 1975, 1976, 1977, 1978, 1980), indicating an age from ca. 9700 to 8900 B.P. A comparable age is suggested for the Ontario materials and those from surrounding areas such as northern Ohio (Payne 1982a).

Points characteristic of this horizon are sometimes alternately beveled, are almost exclusively serrated and, of course, are corner-notched (Figures 4.3 & 4.5). The notches are relatively small and elongated. On some examples (Figure 4.5), the notches can be oriented almost vertically such that they appear basally notched (see also, J. Wright 1978: Plate 1:27). In general, the points are thin and well-made. Some are basally thinned. Bases are convex to concave in outline and, along with the notches, are sometimes ground.

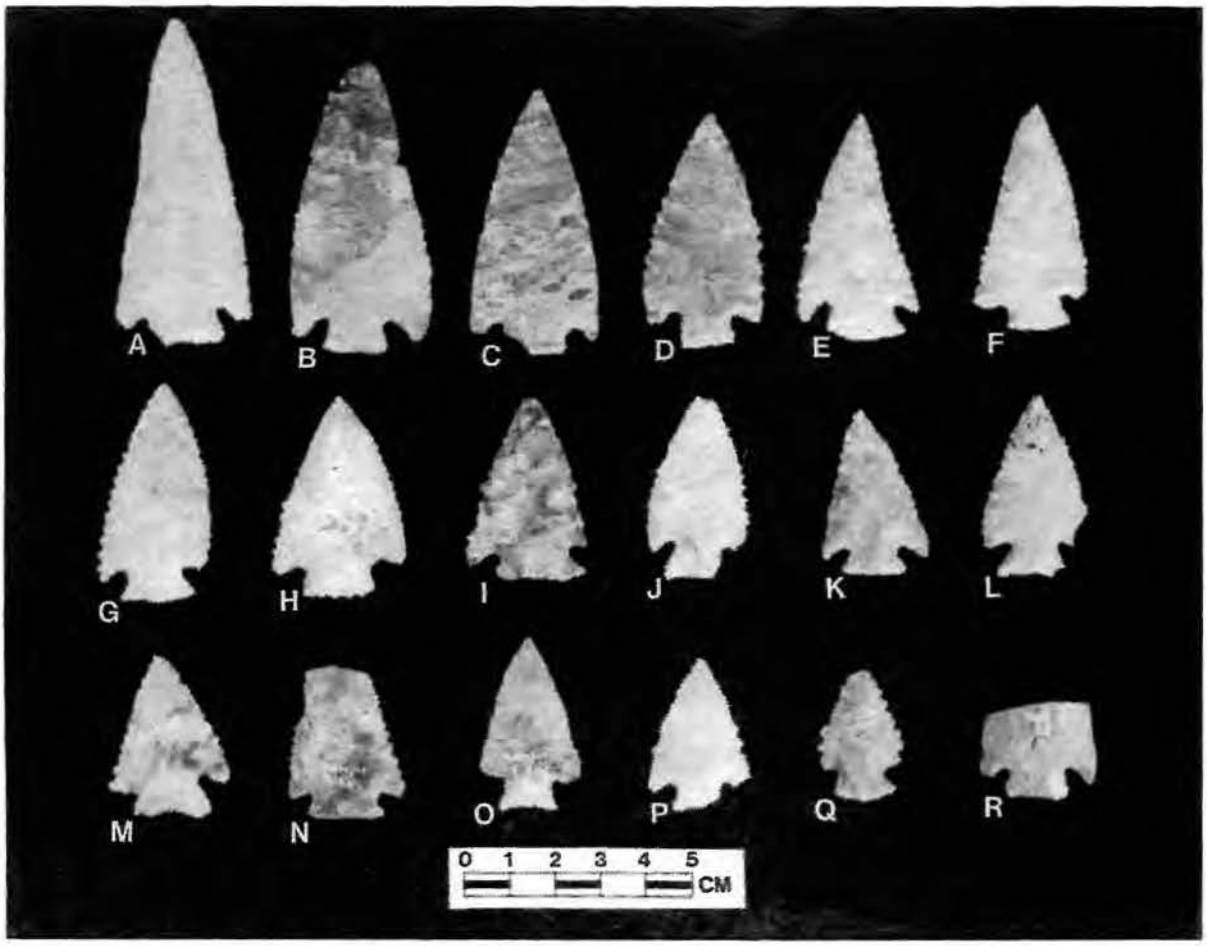

FIGURE 4.5: Early Archaic Corner-Notched Points, Nettling Site.

Other Tool Forms

Tool forms other than points are poorly known from Early Archaic sites in Ontario. However, work at some sites, and in particular at Nettling (Ellis et al.: in press; Fox 1980c; Wortner et al.: in press), provides some knowledge of at least corner-notched horizon tool forms. Moreover, this information permits some inferences on the similarities and differences in tool kits between Late Paleo-Indian and Early Archaic.

Bifacial tool types include first, a large, well-made biface "knife" form with a trianguloid outline (Figure 4.6a-c). Virtually identical items to these tools are reported in association with Early Archaic corner-notched points elsewhere (Broyles 1971: Figure 31h-k). Another biface form is an implement with a "rod-like" fore-section and an expanding base (Figure 4.6d-i). Again, similar items have been reported in the Southeast on comparable sites where they are usually referred to as "drills" (J. Chapman 1977: Figure 24a). Some of these items retain evidence of notches and are clearly recycled from points (e.g. Figure 4.6f,g). Others, however, were made on flakes and are not a product of recycling (Figure 4.6h).

A common unifacial tool form is the hafted end scraper with slightly expanding sides (Figure 4.7a-n). These are relatively small and some can be thumbnail shaped in outline (e.g. Figure 4.7g,l,m). However, many are more elongated (Figures 4.7a-e). It is suggested that these are simply less resharpened items than the thumbnail forms and their frequent presence indicates a lesser emphasis on resharpening than on earlier sites. Another contrast with the

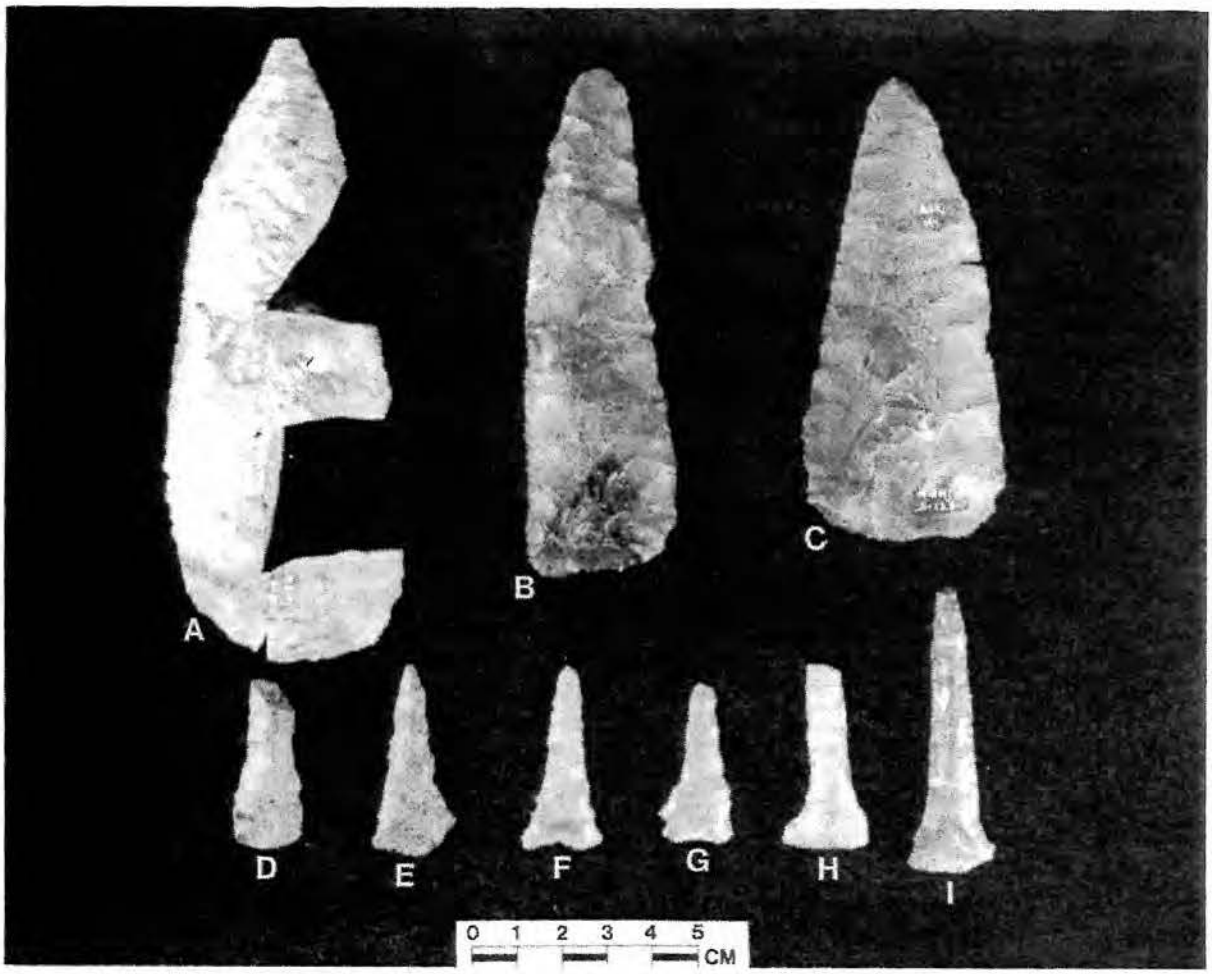

FIGURE 4.6: Early Archaic Trianguloid Bifaces (A-C) and Drills (D-I).

earlier scraper forms is the frequent presence of an extensive, small, parallel retouch completely over the dorsal surface (e.g. Figures 4.7b,c,e,h).

Side scrapers are present, but at least at the Nettling site, these appear to be much less common than on earlier sites and consist largely of forms with concave edges (Figure 4.7o-p). This suggests less emphasis on resharpening of edges. It seems likely that the tasks for which side scrapers were previously used are now being undertaken by simple flakes which were briefly used and then discarded instead of resharpened. These simple flake tools are common at Nettling and can occur on exotic materials such as Upper Mercer, Ohio chert (e.g. Figure 4.7q).

Other unifacial tools include the odd beaked form reported from earlier sites (Figure 4.7s) and what is referred to here as a "hafted concave scraper" (Figure 4.7r). This latter tool form exhibits a thinned, slightly stemmed haft element at the base. Beyond the haft, they always exhibit a steeply retouched concave edge on the left margin. Although not yet reported from Corner-Notched horizon sites elsewhere, virtually identical tools are known from Late Paleo-Indian Dalton sites in the Southeastern United States (e.g. Morse 1982: Figure 7.3v). Further, there are suggestions from surface-collected sites that they may also occur with the earlier Dalton-like Hi-Lo materials in the Great Lakes area.

A final and important class of tools is well-documented at the Nettling site. This class includes a range of generally bifacial forms made on non-siliceous materials ranging from slate to schist to the coarse-grained meta-

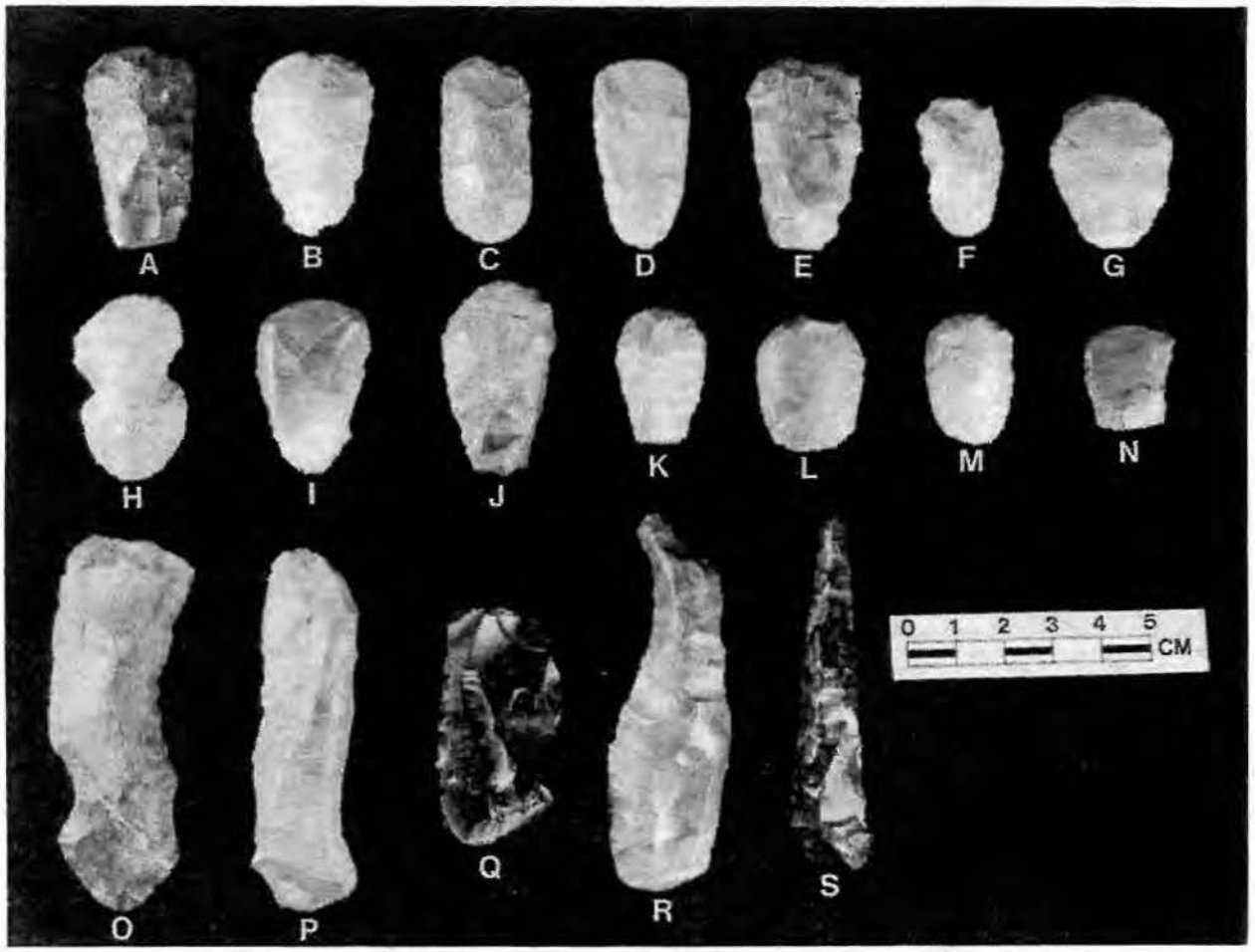

FIGURE 4.7: Early Archaic Unifacial Tools, Nettling Site. A-N: End Scrapers; O-P: Concave Side Scrapers; Q: Used Flake; R: Hafted Concave Scraper; S: Beaked Tool.

sediment, sub-greywacke (see I. Kenyon 1979b). One type is a roughly ovate, simple, bifacial form on a cobble or large spall with roughly bifacially flaked and use-damaged margins. These occur at other sites of this age to the south where they are referred to as "cobble chopper/scrapers" (J. Chapman 1978:68). Another item, represented by over 30 examples at Nettling, is a celt (ungrooved axe) with a ground bit (Figure 4.8a,c-g). The bit end on these tools is often narrower than the hafted ("poll") end -- a feature which distinguishes them from later dating celts. Other than heavy grinding on the lateral and poll end for hafting purposes, the surfaces generally retain flaking from earlier manufacturing stages and some unfinished (e.g. not ground) preforms or "rough-outs" for these tools are found at Nettling (Figure 4.8b). A few (e.g. Figure 4.8g) of these tools, however, lack flaking and are simply water-worn pebbles or cobbles which were only modified by the addition of a ground bit. Shaping by flaking on these items was apparently unnecessary because of the form of the original cobble. A final tool form made on coarse-grained rocks is the sandstone abrader used in the shaping of bone and wood items. Often these have irregular, non-standardized outline shapes but some items with oval outlines and well-defined central grooves are present.

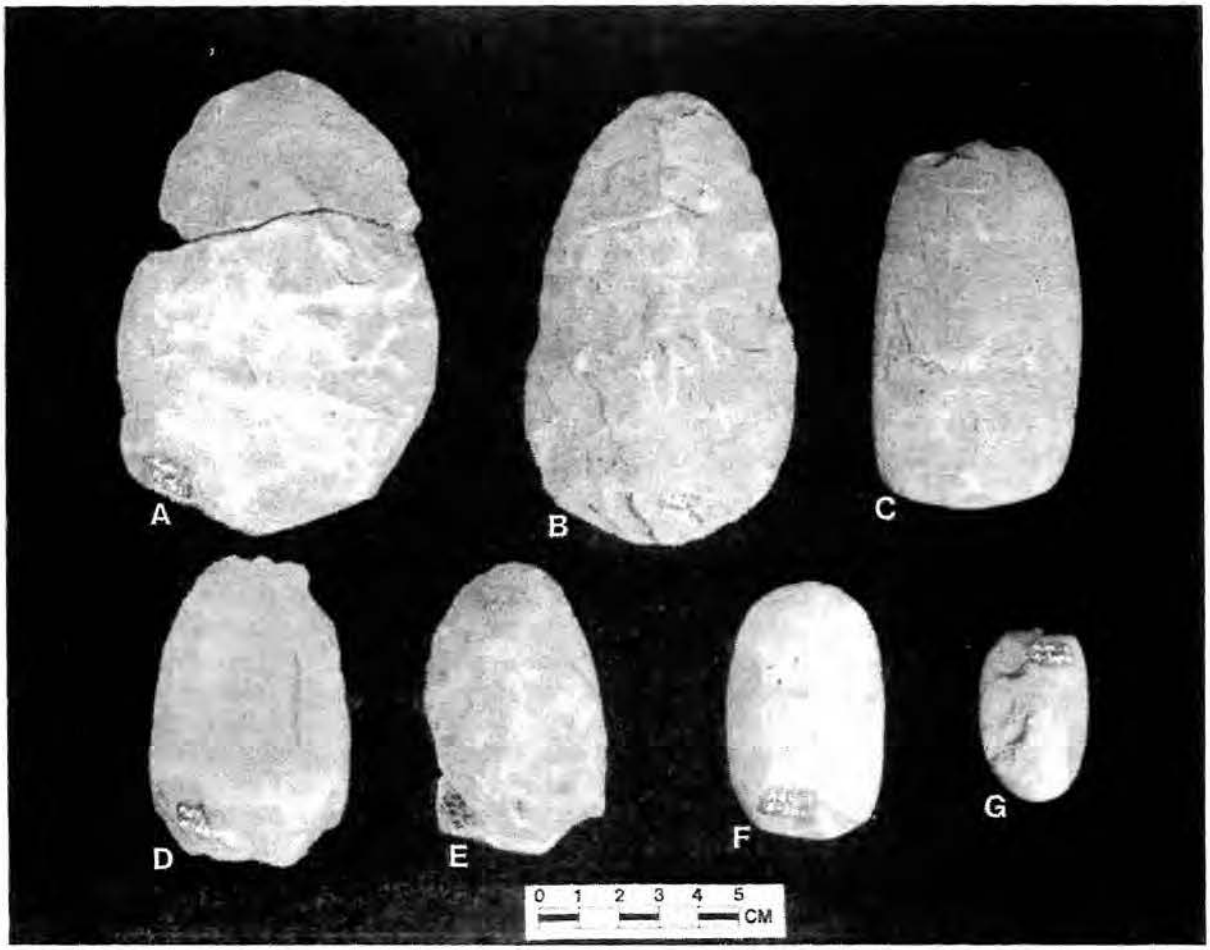

FIGURE 4.8: Early Archaic Cobble and Ground Stone Tools. A, C-G: Chipped Celts with Ground Bits; B: Flaked Celt Preform.

Lithic Material Use

Ontario corner-notched horizon sites provide some insights into lithic raw material procurement and use in the Early Archaic. Generally, stone raw material use in this horizon appears different from that found in Paleo-Indian times. One difference is the well-developed industry on non-cherty, more coarse-grained, materials. While there are suggestions these materials were used on Paleo-Indian sites, during this horizon there appears to be more emphasis on the use of these materials, even though they are not extensively employed for "shaped" tools such as points. As for tools on fine-grained materials such as cherts, there is a much greater emphasis on cherts from secondary deposits than on earlier Paleo-Indian sites. For example, virtually all of the Ontario cherts (Onondaga and Selkirk) at the Nettling site were derived from secondary glacial/riverine deposits in that site's immediate vicinity rather than the bedrock outcrops of those cherts located some 150 km to the east. Moreover, the marked preference for certain single sources to dominate an assemblage, as seen until at least Hi-Lo Paleo-Indian times, is abandoned with at least three chert sources (local secondary deposits of Onondaga/Selkirk, and primary outcrops of Pipe Creek and Upper Mercer materials from Ohio) being well-represented at Nettling. To be sure, there is still some continuity from earlier times in that sites can yield a high percentage of materials which were little used by later occupants of the same area and which can be from distant sources. For instance, there is the frequent use of Haldimand chert around the western end of Lake Ontario (R. Parker 1986b). Another example can be seen at the Nettling site where almost 70% of the formalized tools (excluding preforms discarded in manufacture) are made on Ohio cherts such as Pipe Creek

(Figure 4.2) from 200 km or more away (Ellis et al.: in press). This suggests these groups were covering relatively large areas during seasonal rounds. As an aside, the lowered Lake levels in the western Lake Erie basin may have meant that the Nettling inhabitants could more directly obtain these cherts straight across that basin and, in fact, exploited areas now under water (Fox 1980c).

Therefore, although there are indications of some continuity with earlier patterns of lithic procurement, this horizon represents the beginnings of a more open-ended approach to stone acquisition. In line with this inference, we see the beginnings of the demise of certain characteristics found in earlier assemblages designed to increase the portability of stone materials. For example, at sites such as Nettling, larger waste flakes are more common indicating more of the primary stages of manufacture were carried out away from sources. Tools are less frequently resharpened as suggested by longer end scrapers and the diminishing frequency of side scrapers in favour of simple used flakes. Finally, we have the appearance of large, heavy tools such as celts which in themselves are less portable.

Bifurcate Horizon (ca. 8900 to 8000 B.P.)

Components of this horizon have been extensively investigated in the southeastern United States (Broyles 1971; J. Chapman 1975, 1976, 1977, 1978, 1979). A major diagnostic is the presence of point forms with deeply split or notched, bifurcated bases (Figures 4.3 & 4.9). These points can be serrated and are sometimes beveled but vary considerably in other characteristics. Some of this variation is due to heavy reworking and resharpening. However, other variation may reflect hafting design changes through time. As many as four time-sequential bifurcate point types can be recognized in the Southeast. These occur in the same stratigraphic sequence at numerous sites and are firmly dated by C-14 to between 8900 and 8000 B.P. The earliest point forms such as the St. Alban's type, are corner-notched as well as bifurcated indicating continuity from the preceding horizon. Later types such as LeCroy and Kanahwa are stemmed, and begin a sequence of stemmed points which continue into the later Middle Archaic.

Because of their distinctive basal characteristics, bifurcate forms were the first Early Archaic points noted in Ontario (Noble 1975b). Since that time, numerous finds of these points have been made but with few exceptions (e.g. Jackson 1979; A. Roberts 1980:32; J. Wright 1978), remain unreported. These finds include forms reminiscent of all the types in the Southeast, despite the fact they have often been treated as synonymous with the "LeCroy" type. However, as is the case in immediately adjacent areas such as northern Ohio (see Payne 1982a), there are numerous finds which do not readily fit into any of the southeastern types.

Bifurcate points are known to be made on materials such as Kettle Point, Onondaga and Haldimand. Use of certain outcrops of the latter two cherts has been documented respectively at the Slack-Caswell (William Fox: personal communication) and Allan (R. Parker 1986a, 1986b) sites. Impressionistically, exotic cherts such as those from Ohio sources do not appear to have been as widely used in bifurcate times as they were on earlier components.

The lack of known sites means that little can be said about the bifurcate horizon in Ontario, other than that it was represented. If the data from the Southeast on this manifestation are any guide (e.g. J. Chapman 1975, 1977:124), there appear to be few changes from that of the earlier corner-notched associated materials in, at least, the tool kit. For example, briefly used flakes are a common part of the tool kit and chipped celts with ground bits continue to occur.

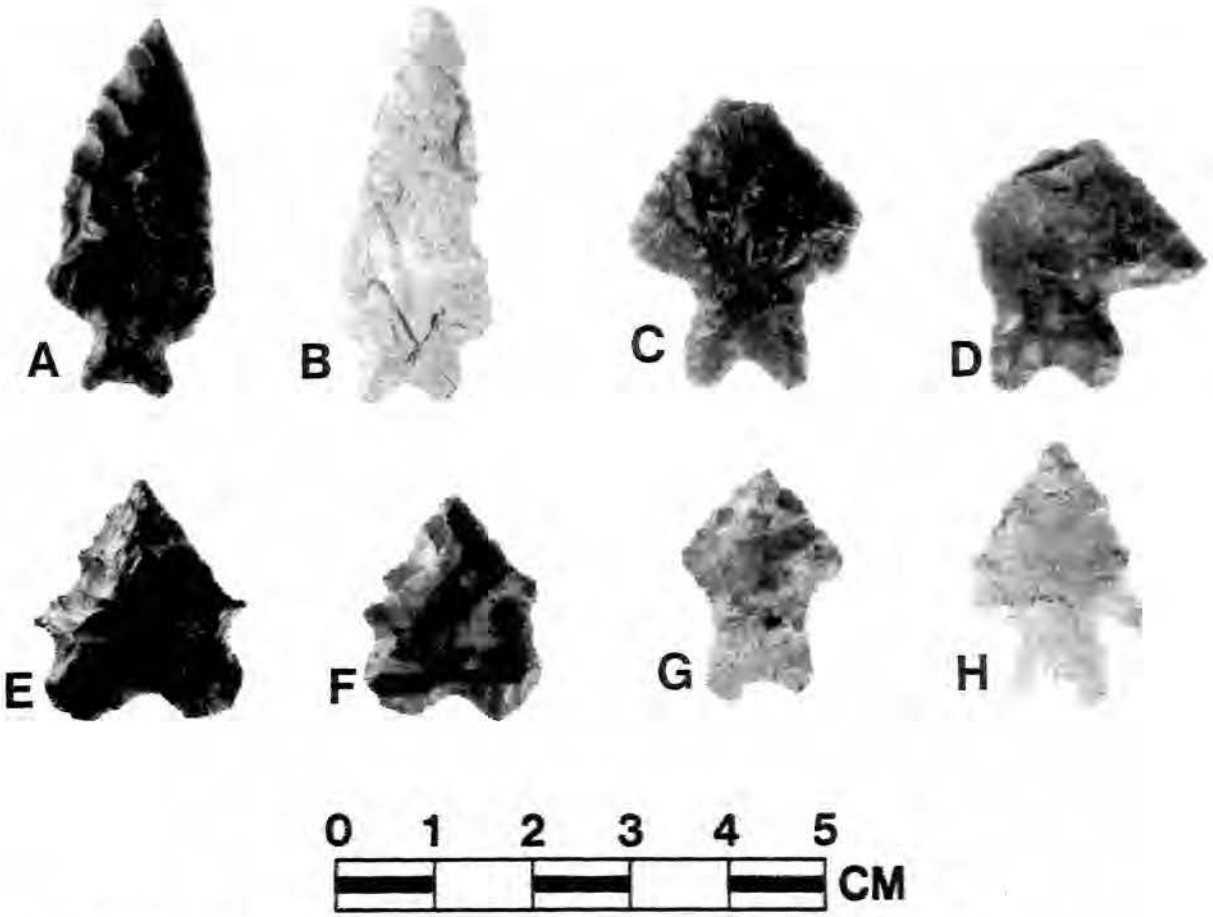

FIGURE 4.9: Early Archaic Bifurcate Base Points from Various Sites in Southwestern Ontario.

Summary

We have suggested the presence of three Early Archaic horizons in Ontario comparable to those in other areas of eastern North America. Generally, these materials are poorly known. Nonetheless, we can at least document good evidence for the presence of these Early Archaic occupations in Ontario. Although this evidence remains mostly unpublished, the large number of finds now known suggests these materials are not as extremely rare as has been emphasized in the past. Indeed, the number of known finds is quite impressive, especially since they are largely a product of information collected only over the last 10 years.

With at least the corner-notched horizon, and due largely to the work of S. Wortner and W. Fox at the Nettling site, we can begin to document the initiation of several trends which come to characterize the Archaic in general. These include: a greater reliance on a wide range of stone types and sources and especially secondary sources rather than primary outcrops; the initiation of a trend towards tool kits dominated more fully by briefly used, amorphous, simple flake tools (a trend evident as well in corner-notched horizon materials in the Southeast; see J. Chapman 1980:127); and the appearance of a ground stone industry. The latter includes some of the earliest specialized heavy wood-working tools known from the Northeast and certainly the Great Lakes area, such as the celts.

Despite these changes, clear continuity with earlier materials is evident. Aspects of tool forms such as the beveling on points and certain tool forms, such as the "beaked" scrapers and thumbnail end scrapers, are shared with

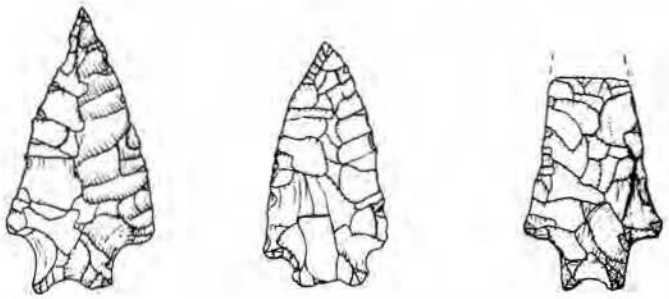

FIGURE 4.10: Stanly/Neville-like Middle Archaic Points from Southern Ontario. Points are shown at actual size.

earlier materials. Moreover, the stone raw materials used, such as the abundance of Pipe Creek chert from Ohio at Nettling, suggest that settlements were still moved over relatively large areas on a yearly round. In addition, the consistent presence, albeit in small amounts, of exotic stone materials indicates contacts were still maintained over large areas. This suggests a continuation of the practice of "gift exchange".

Finally, although we have emphasized the similarities in point forms at this time level throughout eastern North America, it is quite clear that the remainder of the tool kits were also very similar over vast areas -- a continuation of a characteristic of Paleo-Indian assemblages. For instance, corner-notched horizon tool kits in Ontario include items such as large trianguloid bifaces, expanding-base "drills", small end scraper forms which often have carefully flaked dorsal surfaces, cobble choppers, and celts with ground bits. These items are virtually identical to the tool types associated with similar point forms over most of eastern North America.

Middle Archaic (ca. 8000 to 4500 B.P.)

Background

The earliest Middle Archaic groups are more poorly known than either their predecessors or successors. Yet, an essentially modern vegetation and climate were established by 8000 B.P. and if anything, temperatures were warmer than they are today (Figure 4.1; Karrow and Warner: this volume). In essence, there is absolutely no basis for arguing the environment severely constrained Middle Archaic populations. Again, we suspect that the paucity of reported sites is largely a recognition problem due to several reasons noted in discussions of the Early Archaic. For example, with the notable exception of the high water Nipissing phase in the Lake Huron basin of ca. 5500 to 4500 B.P. (Karrow and Warner, this volume), water levels in the major lake basins were generally much below modern levels and thus, many prime lakeside site locations are now inundated.

Present evidence suggests that developments in the Middle Archaic prior to ca. 6000 to 5500 B.P. were much different than those after that date. Moreover, our knowledge of the earlier materials is relatively poor in relation to later developments. Thus, we have chosen to divide the Middle Archaic into two time periods for purposes of discussion.

Middle Archaic I (ca. 8000 to 5500 B.P.)

Throughout eastern North America there are good suggestions that stemmed points were in use during the earliest part of the Middle Archaic up until around 7000 to 6500 B.P. (Figure 4.3). Indeed, these can be used to suggest a stemmed point horizon around that time, comparable to those described for the Early Archaic. Several distinctive types of stemmed points have been recognized in other areas of eastern North America which appear to represent a time-series (J. Chapman 1980). These include: Kirk Stemmed/Serrated (Coe 1964:70), Stanly/Neville Stemmed (Coe 1964:35-36; Dincauze 1976:26-29) and Morrow Mountain/Stark Stemmed (Coe 1964:37-43; Dincauze 1976:29-37). These points are rarely alternately beveled, and only some of these forms, those of the Kirk types, are serrated with any degree of regularity. The general absence of beveling/serration probably accounts for why these stemmed Middle Archaic points are rarely recognized in Ontario. Most investigators have tended to emphasize those traits in recognizing early point forms. Nonetheless, the appearance to some extent of serrations indicates clear continuity in point forms from earlier times. Moreover, the stemming itself is good evidence of continuity since the latest Early Archaic point forms are stemmed as well as bifurcated.

Excepting the Morrow Mountain forms, virtually identical examples of the other two types are reported from southern Ontario and immediately adjacent areas (e.g. Blank 1970: Fig. 42; Deller et al. 1986: Fig. 3-1; Payne 1982a: Fig. 26; J.V. Wright 1978: Plate 1, 13-18, 24). However, only Stanly/Neville forms appear to be common (Figures 4.3, 4.10). These are small to medium size points with slightly concave to straight bases and blade edges, slightly contracting to parallel-sided stems which can exhibit minimal ear-flaring and basal thinning. These points are often made on small, thin flakes.

Although these points are known to occur throughout southern Ontario, few actual sites have been located. Only one site, the Poison Ivy site on East Sugar Island in Rice Lake (Figure 4.11) has seen any degree of excavation (W. Kenyon 1973). The predominant Archaic occupation at that site represents the Vergennes phase of the Middle Archaic Laurentian tradition (see below). However, several Stanly/Neville-like points are also reported from the site (L.J. Jackson: personal communication).

Given this data base, aside from noting these Middle Archaic materials are present, few other inferences are possible. This is extremely unfortunate as data from other areas of the east suggest it was during this time that many "classic" Archaic assemblage traits appeared. One is the extensive use of a wide range of stone materials of lower grades in the manufacture of flaked tools, particularly in the production of highly "shaped" tools. For example, points of this horizon are frequently made on materials such as quartz, siltstone, felsites and coarse-grained rhyolites (Blanton 1984; Dincauze 1975).

Second, highly "shaped" flaked stone tools excepting points are extremely rare. Another notable addition to the tool kit is the ubiquitous notched pebbles used as netsinkers (J. Chapman 1977:125, 1978:74). Also, although some plant-processing artifacts are reported earlier, items such as manos, grinding stones, etc. appear to become more common at around this time.

Finally, fully ground and polished stone tools are certainly present by the early Middle Archaic.[1] Especially notable here are grooved axes (Dincauze 1975:73; Fowler 1957). This tool form has been reported from Ontario (Figure 4.12). Some of the Ontario finds may date to this time period but there is evidence grooved axe use continued into later times. Also notable is the presence of bannerstones. These items are restricted solely to Archaic assemblages. They consist of ground and polished items with a hole drilled through their centre (Figure 4.13). Some resemble simple hollow tubes but most consist of "winged" forms which often have the hole drilled through a thickened, occasionally notched, centre (e.g. Figure 4.13a, d). They are often interpreted as weights for spear-

[1] There is actually some suggestion that fully ground and polished tools may appear somewhat earlier. The Nettling Early Archaic site discussed earlier has yielded several ground and polished stone "tubes." In the absence of any evidence for substantial later occupations at that site, these "tubes" may be associated with the Early Archaic at that site (Ellis et al.: in press; Wortner et al.: in press).

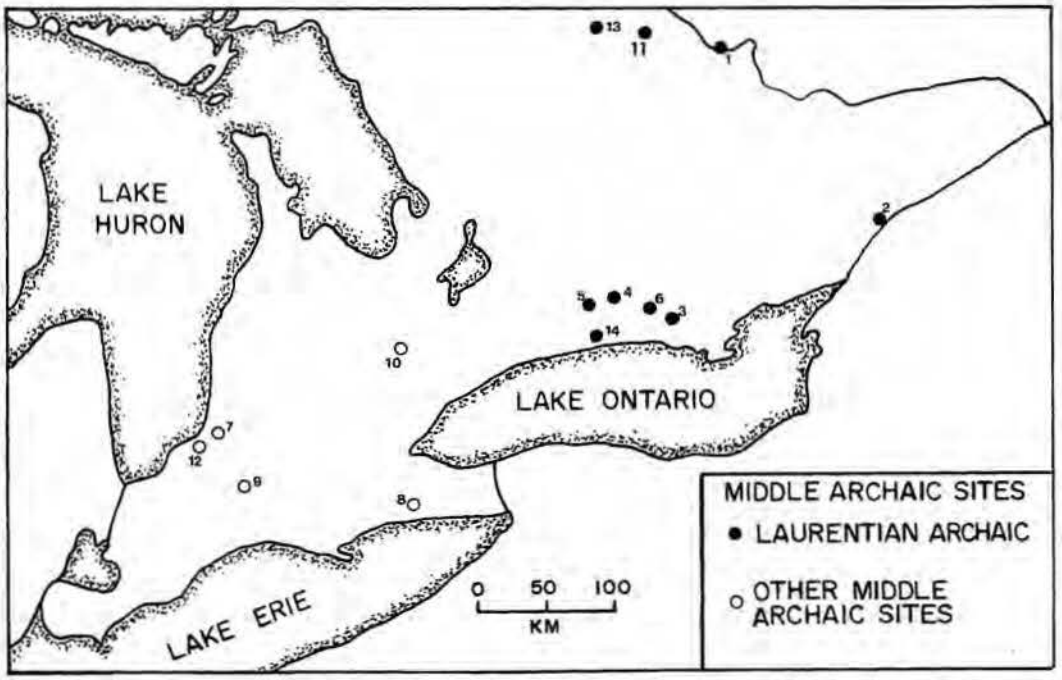

FIGURE 4.11: Location of Some Middle Archaic Sites. Sites: 1) Allumette Island-1 & Morrison's Island-6; 2) Brockville; 3) Morrow; 4) Poison Ivy and East Sugar Island; 5) McIntyre; 6) Parker; 7) Parkhill; 8)Allan; 9) Welke-Tonkonoh; 10) Milton-Thomazi; 11) Whitson Lake-2; 12) Pascoe; 13) Radiant Lake-3; 14) ENL Otter Creek/Brewerton.

throwers or atlatls. Although bannerstones can vary considerably in form, those associated with the stemmed points are simple forms which lack the thickened centre and overall, have a plan-shape resembling a "pick" or half-moon (semi-lunar; see J. Chapman 1977:125; Coe 1964:52-53; Dincauze 1975:74-75). However, some tubular forms lacking the "wings" are also reported.

Our knowledge of assemblages and events immediately post-dating the "stemmed point horizon" is almost non-existent. Although there are suggestions that certain point styles were in use over relatively large areas, there are signs of increasing regional variability in such styles about this time. For example, narrow stemmed points seem to have been in use in southern New England (Dincauze 1975) whereas broad-bladed notched forms were being employed in many other areas of the Northeast to Mid-west. Especially notable among the latter styles are side-notched forms. Radiocarbon dates from the Sylvan Lake Shelter, McCulley #1 and the Shafer sites in New York state (Funk 1976; Funk and Rippeteau 1977:29), the Weber 1 site in eastern Michigan (Lovis 1989; Monaghan et al. 1986) and the Koster Site in Illinois (J. Brown and Vierra 1983) suggest that these side-notched points were in use by 6500 B.P. Virtually identical point forms continued to be used until about 5,000 B.P. (e.g. Figure 4.14a-d,f) and these will be described in more detail below. It seems probable that such points were also in use in southern Ontario by 6500 B.P. However, this is largely speculation. The only archaeological recovery from Ontario of this age is an isolated burial recovered from the Milton-Thomazi site (Figure 4.11) dated to ca. 6000 B.P. and this individual was unaccompanied by any grave goods (Katzenburg and Sullivan 1979).

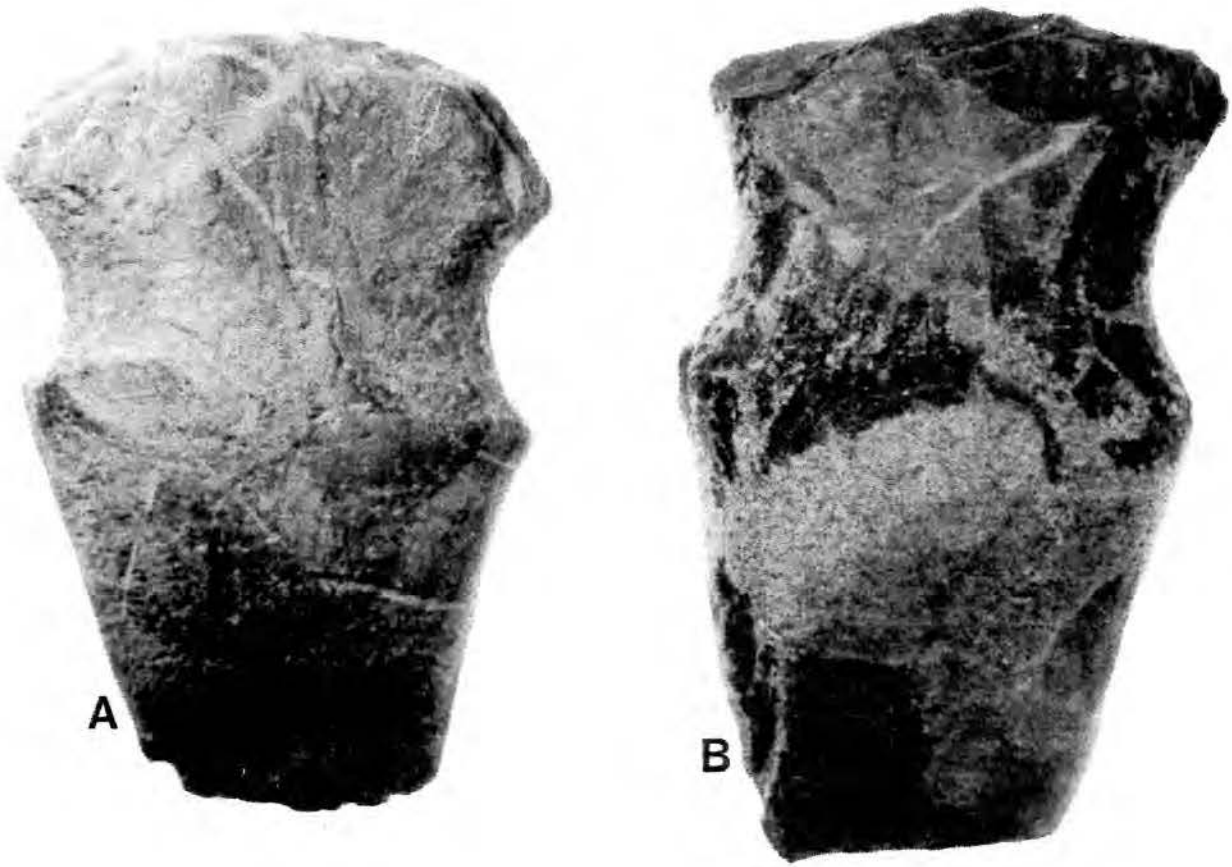

FIGURE 4.12: Middle and Late Archaic Grooved Axes from Southwestern Ontario.
Length of A is 137 mm.

Middle Archaic II (ca. 5500 to 4500 B.P.)

Around ca. 6000 to 5500 B.P., developments within the Archaic become much more complex. As will be described in more detail below, broad-bladed, side-notched and later, corner-notched points were in use throughout much of the Northeast and Mid-west during the remainder of the Middle Archaic. However, in contrast to earlier times, the tool kits and sites associated with certain general point styles can exhibit considerable geographic variability. For example, in areas such as Vermont, western Quebec and northeastern New York, the side-notched forms are recovered in association with a number of distinctive ground stone tools to be described below such as stemmed points, bayonets and semi-lunar knives. These sites are usually assigned to a "Laurentian" Archaic (see below and W. Ritchie 1969). In contrast, assemblages with comparable point forms in Illinois, Indiana and areas farther south down the Mississippi lack such groundstone tool forms but at the same time consistently include artifact forms such as grooved axes and elaborate incised bone pins not reported from the New York/Vermont sites (see C. Chapman

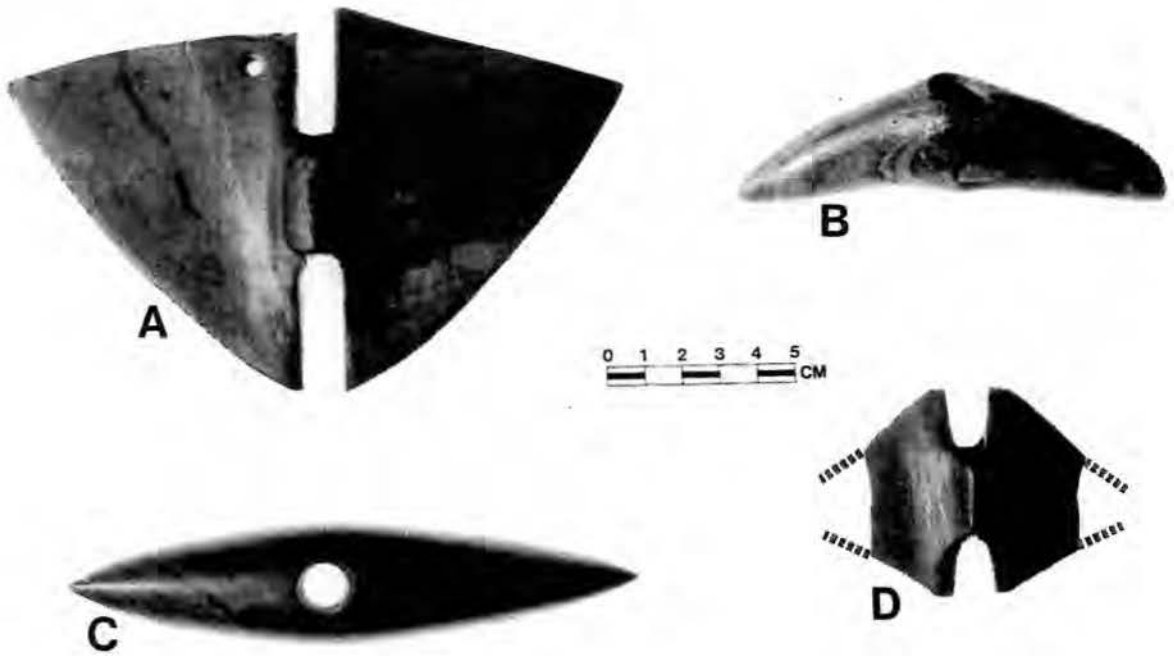

FIGURE 4.13: Middle and Late Archaic Bannerstones from Southern Ontario. A: Plan View of Notched Bannerstone with Thickened Centre; B: Plan View of Pick Type Bannerstone; C: Side View of Bannerstone Showing Drilled Hole; D: Plan View of Notched Bannerstone with Thickened Centre. Courtesy of Dr. James V. Wright and the Canadian Museum of Civilization, Ottawa. Photo by William Fox.

1975:158-183; T. Cook 1976; Jefferies 1987; R. Miller 1941). A specific example is the Helton Phase or Culture in the Illinois/Indiana area (T. Cook 1976; J. Tuck 1978a:28-30).

Some prefer to call all Ontario assemblages with these points and dating to the 5500 to 4500 B.P. period, or for that matter, even subsequent developments, as the Laurentian Archaic (e.g. J. Wright 1972b, 1987a). Yet, we prefer to use the term Laurentian in the sense in which it was originally defined (see below and Funk 1988). On this basis, Laurentian sites are restricted to southeastern Ontario and these sites are described below.

Southeastern Ontario: The Laurentian Archaic

Definition

The term Laurentian has been applied to a wide range of Archaic manifestations over a large spatial area. However, as originally conceived of by W. Ritchie (1940:96, 1969:79-83; see also J. Tuck 1977), the Laurentian consisted of a long-lived tradition representing Archaic groups adapted primarily to the transitional "Lake-Forest" zone between the deciduous forests to the south and the more boreal, coniferous forests of the north. It is only one of a series of geographical manifestations of the time found in this transitional zone. Another is the earliest representatives of the "Old Copper Culture" (Ritzenthaler 1946; Ritzenthaler and Wittry 1952; Wittry 1957) of the Upper Great Lakes which is not really a culture at all (in an ethnographic or archaeological sense). Instead, it is simply a "grab-bag" category of diverse Middle to Late Archaic groups in Wisconsin and vicinity who exploited the local Native copper resources (see below) for tools. Nonetheless, the earliest of the copper-using groups in that area, specifically those who made broad-bladed side-notched stone points of the type represented at the Raddatz rock shelter (Wittry 1959), are probably contemporary with Laurentian (for discussion, see Stoltman 1986:213). In any event, some investigators include Laurentian, Old Copper and other like and subsequent developments in this forest zone in a more broadly defined "Lake Forest Archaic" (Snow 1980:216-222; J. Tuck 1978a).

Diagnostic of assemblages associated with the Laurentian in W. Ritchie's terms was a constellation or association of certain artifact forms to be described in more detail below. These included not only certain broad-bladed forms of chipped stone points but importantly, a suite of certain ground and polished stone tools including semilunar knives or ulus; plummets; a variety of slate points, bayonets and knives; gouges; adzes; and ungrooved axes. Although some of these forms can occur in other than Laurentian contexts, it is only in Laurentian that these items consistently co-occur.

It should be emphasized that the ground stone tools are in fact rare on Laurentian sites, usually making up less than 5% of the total site assemblages. It is for this reason that some investigators (e.g. J. Wright 1972b:76 and personal communication) are reluctant to use these as definitive criteria and prefer a broader definition than that offered by W. Ritchie (1969). Regardless, it is clear that in southern Ontario, the *only* documented sites yielding the constellation of artifacts deemed diagnostic by W. Ritchie (1969) *are* in the eastern part of the province (Figure 4.11). The restriction of sites to that area is consistent with and supports W. Ritchie's (1969: 82-83) assertions that his Laurentian tradition is associated with the transitional Lake-Forest zone. It is only in the eastern part of southern Ontario that this environmental situation occurs and is referred to herein as the Canadian biotic province (Karrow and Warner: this volume). Ontario sites include: East Sugar Island (W. Ritchie 1949a), Poison Ivy (W. Kenyon 1973), Parker (Leechman and DeLaguna 1949a; W. Ritchie 1949a:2), Brockville ("Les Galops Rapids"; Reynolds 1856), McIntyre (Johnston 1968b:6-11, 1984), Morrow (Hakas 1967:5) and perhaps, Whitson Lake-2 (Mitchell 1972), Radiant Lake-3 (Rutherford et al. 1979:82) and ENL Otter Creek/Brewerton (A. Roberts 1985:212-227). Although technically in Quebec, the Allumette-1 and Morrison's-6 sites on islands in the Ottawa River near Pembroke, Ontario (Kennedy 1966) are also of relevance to this discussion (Figure 4.11).

Age

The Laurentian Archaic persisted for 1000 or more years. Within this time span it is possible to recognize subdivisions which primarily appear to represent change through time and which usually are referred to as "phases". Although several such phases have been suggested, only two are well-documented: Vergennes and Brewerton (see W. Ritchie 1969:83-104). While there are other suggested differences such as a decrease in the frequency of ground stone tools through time, a major distinguishing criterion of the phases is point form.

Vergennes is the oldest phase and is C-14 dated to between ca. 5500 and 5000 B.P. (W. Ritchie and Funk 1973:340; J. Wright 1972b: 75). As implied above, and although there are exceptions (e.g. Figure 4.14e; see also Funk 1988), Laurentian point forms are notched and, excepting resharpened and reworked items, are broad-bladed. Those from Vergennes phase sites are basally thinned and broadly side-notched (Figure 4.14a-d,f). They have wide

corners below the notch and often exhibit concave bases. Notches and base are usually ground. These points are similar to, and suggest continuity with, earlier pre-Laurentian side-notched forms. In Vergennes contexts, these points are assigned to the Otter Creek type (W. Ritchie 1971b:40-41) and are often made on less flakable materials such as quartzite (e.g. W. Ritchie 1969:87; Kennedy 1966:112). Besides the Poison Ivy, Morrow, McIntyre and Allumette Island-1 sites (Figure 4.11), other important Vergennes sites include the KI, Donovan and Otter Creek #2 sites in Vermont (W. Ritchie 1969:84-89, 1979) and the DbEj-11 site on the north shore of the St. Lawrence near Tadoussac, Quebec (Archambault 1987:108-110).

The Brewerton phase takes its name from the important Oberlander #1 and Robinson sites near the town of Brewerton in north-central New York state (W. Ritchie 1940). Other sites with Brewerton components include the McIntyre and Whitson Lake-2 sites in Ontario and Morrison's Island-6 in western Quebec. The phase is characterized by a variety of named point types of which Brewerton corner-notched and Brewerton side-notched (Figures 4.3 & 4.15; W. Ritchie 1971b:16-19) are the most common. This variety may suggest the use of several different point forms by the same groups. However, there is a strong suspicion that at least some of these types represent various stages of reworking and resharpening of the same original point form. For example, Ellis and Deller (1986:50) have suggested the pristine form is corner-notched and through progressive resharpening of the lateral blade edges the barb overhanging the notch is partially removed resulting in the side-notched forms.

The age of Brewerton phase materials is debatable. Several C-14 dates have been reported from sites in New York suggesting an age around 4000 B.P. However, these sites have other components and the reported dates may not refer to the Brewerton phase occupations (W. Ritchie and Funk 1973:50). Given the close resemblances between Brewerton and the other Laurentian assemblages such as Vergennes, Funk's suggestion that Brewerton dates to ca. 4500 B.P. or earlier is followed here (in W. Ritchie and Funk 1973:50; see also, Funk and Rippeteau 1977:29). This dating receives some support from a C-14 assay available from Morrison's Island-6 of 4700 B.P. (Kennedy 1966:114), and one from Whitson Lake-2 of 4540 B.P. (Rutherford et al. 1979:83). It is also supported by some recent dates from Brewerton components in upstate New York, including a date of 4795 ± 230 B.P. (GX-10460) from the basal stratum at the Camelot No. 2 site (see Funk and Rippeteau 1977:23) and a date of 5010 ± 130 B.P. (AA-2251) from burial #4 at one of the Brewerton type sites, Oberlander No. 1 (Funk 1988 and personal communication). Also, although not from Laurentian sites, point forms comparable to Brewerton forms have been recovered in contexts from southwestern Ontario suggesting a pre-4500 B.P. placement (see below).

Artifact Assemblages

Aside from the broad-bladed point forms noted above, Laurentian chipped stone artifact assemblages are not that impressive. They generally include: notched end scrapers (e.g Figure 4.15d,e) and drills which appear to be largely recycled from points, bifacial knives, and a variety of simple flake tools. Rough stone artifacts include choppers, abraders, and some plant-processing tools such as manos and milling stones. The latter are generally rare.

Much more impressive, and particularly on Vergennes phase sites, is the elaborate ground and polished stone tool industry (Figure 4.14). Notable here are stemmed and unstemmed slate bayonets and lance heads (Figure 4.14m), stemmed slate points which sometimes have serrated haft elements (Figure 4.14j), semi-lunar or half-moon shaped knives or ulus and plummets (Figure 4.14o). The latter resemble modern surveyor's plumb-bobs and typically have "knobbed" tops. These are generally regarded as weights used in fishing activities, but some have suggested their use as bolas in hunting waterfowl. Other ground stone items include ungrooved axes or celts, adzes, chisels, gouges and occasionally, simple bannerstone forms (Figure 4.14g,k,n). Overall, almost every ground stone tool form known from southern Ontario prehistoric sites is represented in Laurentian, a notable exception being grooved axes.

Bone artifacts include stemmed, socketed and barbed points, unilaterally barbed harpoons with holes for attachment of the line linking the harpoon head to the shaft, pointed awls, gouges, fish hooks, bipointed gorges presumably used in fishing activities, whistles or flutes, beaver incisors employed as knives, perforated bear canines which probably served as pendants, large needles used in making fish-nets or snowshoes and smaller eyed needles used in sewing activities.

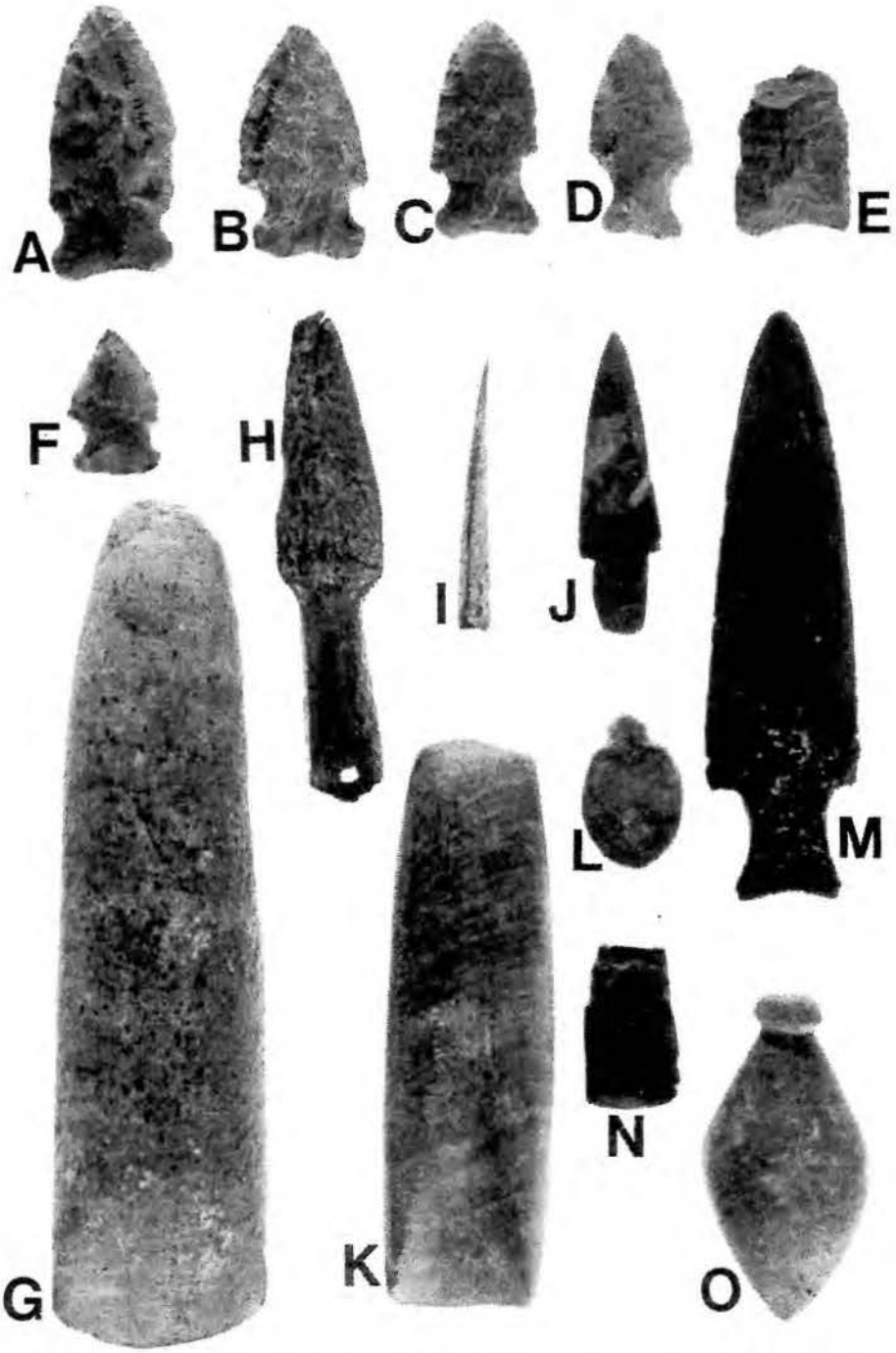

FIGURE 4.14: Laurentian (Vergennes Phase) Archaic Artifacts from the Allumette Island-1 Site, Pontiac County, Quebec. A-D, F: Otter Creek-Like Side-Notched Points; E: Lanceolate Point; G: Adze; H: Open-socketed Copper Spear Point; I: Conical Copper Projectile Point; J: Ground Slate Point; K: Gouge; L: Sandstone Abrader; M: Expanding Stemmed Ground Slate Bayonet or Knife; N: Chisel; O: Plummet. Length of G is 240 mm. Courtesy of Dr. James V. Wright and the Canadian Museum of Civilization, Ottawa.

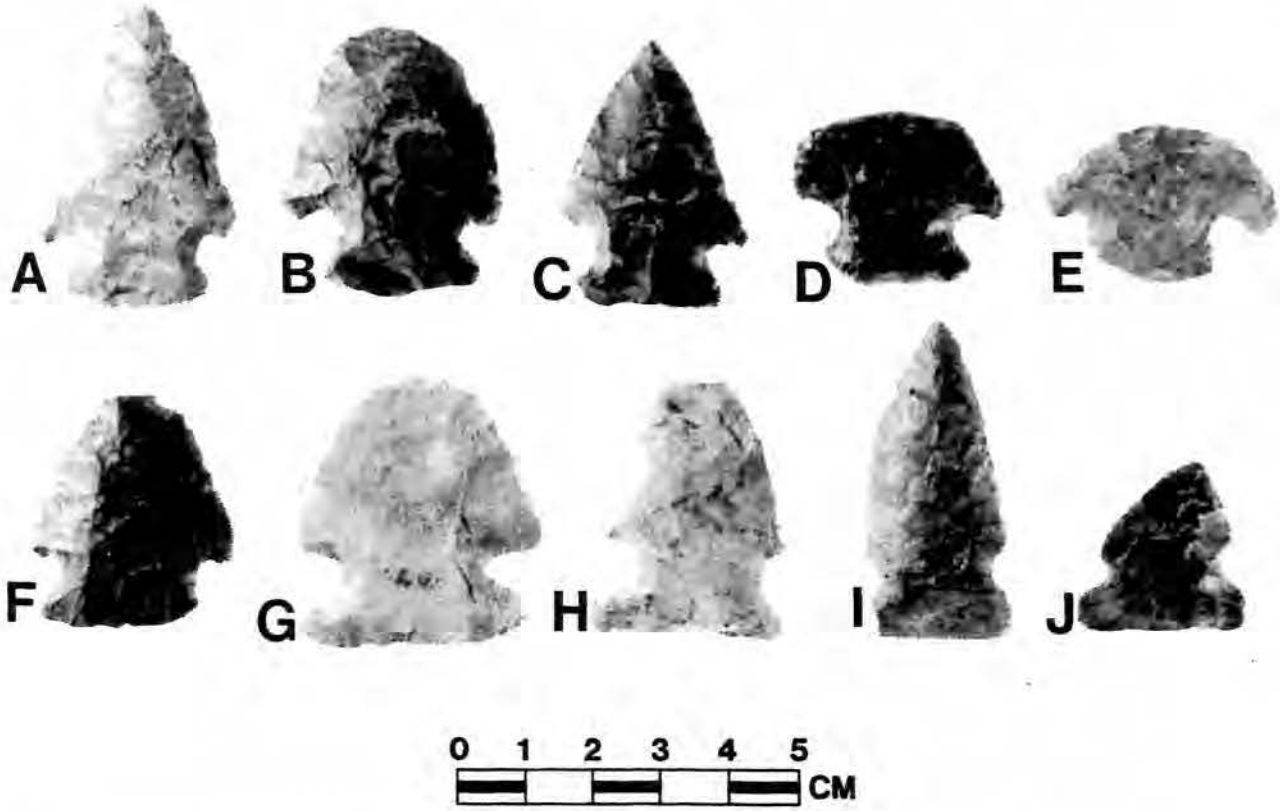

FIGURE 4.15: Brewerton Side- and Corner-Notched Points. D and E have been worked into end scrapers or "bunts".

Many of the bone and ground stone items have counterparts made on Native copper although the frequency of this material at sites can vary considerably. The copper items were not smelted or cast. Rather, they were heated at low temperatures which altered the metal's structure (annealed) and permitted it to be cold-hammered into shape without breaking or cracking. This copper originated in the Lake Superior region (see Griffin 1961) in a relatively pure form as nuggets (Figure 4.16h). It was probably obtained by the southern Ontario groups largely through exchange with Archaic groups in the Superior area.

The copper artifacts are occasionally more decorative in nature and include some tubular beads and bracelets (see Kennedy 1966: Figure 2-1,2). However, most of these items are utilitarian. Specific forms include a range of spear or bayonet tips with conical, open-socketed, notched, stemmed or tanged haft elements (Figures 4.14h,i & 4.16b-c,e). Other reported copper tools include awls, needles, scrapers (Figure 4.16i), bipointed gorges, fish hooks, gouges, adzes, and "spuds" (Figure 4.16j). The last named are hollow bits for axes or adzes which fit over a wooden poll. Copper knives also occur. These include forms of a crescentic shape which apparently had wooden handles and are functional equivalents in copper of the stone ulus (Figure 4.16f). Another common form has a convex working edge opposite a flat back and exhibits a tanged haft element (Figure 4.16a,d).

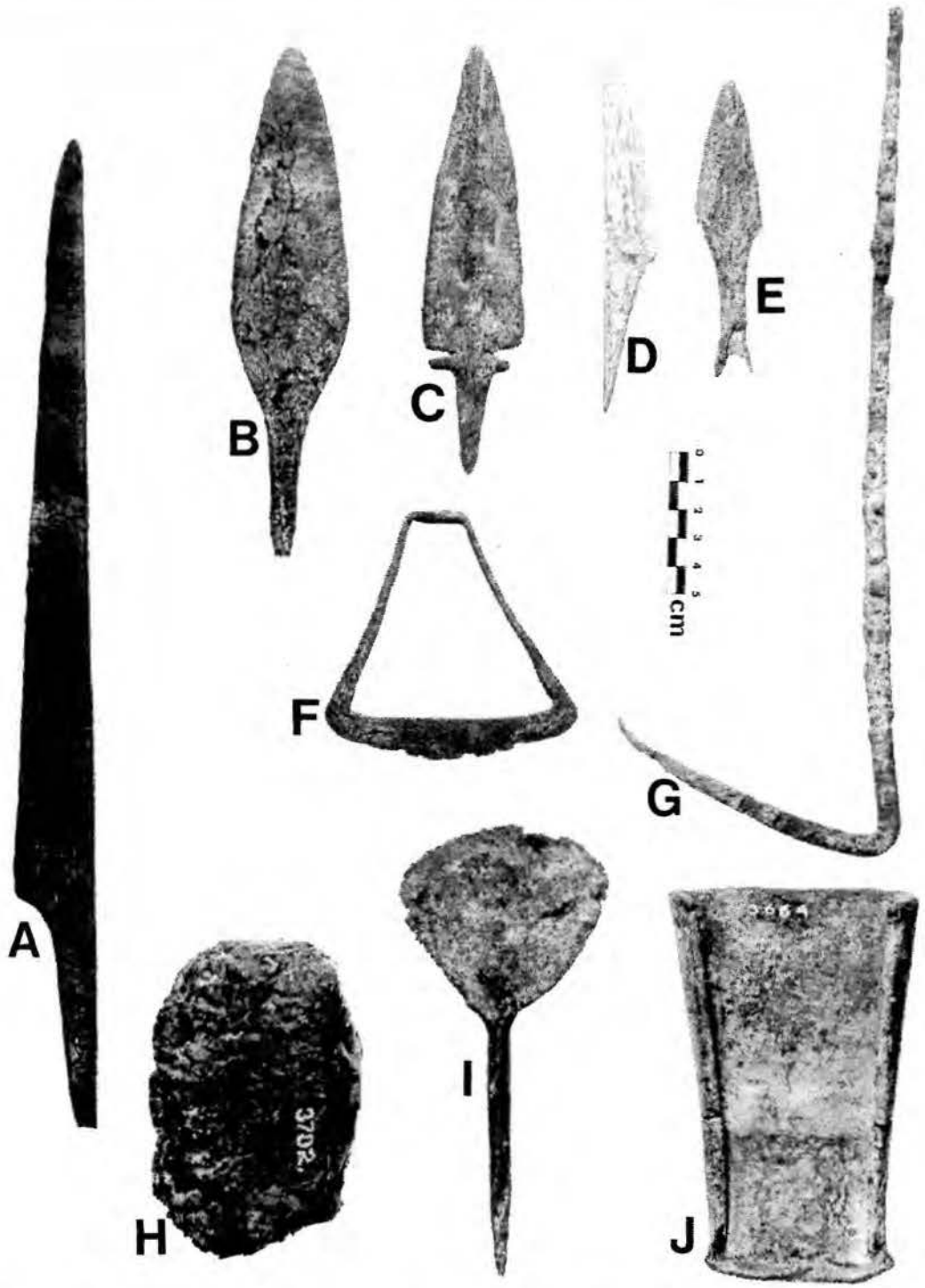

FIGURE 4.16: Native Copper Tools from Various Locations in Ontario. A,D: Assymetrical Tanged Knives; B-C, E: Spear Tips; F: Crescent or Semi-Lunar Knife; G: Fish Gaff; H: Unmodified Lump of Copper from Western Lake Superior Area; I: Scraper; J: "Spud". Courtesy of Dr. Peter L. Storck and the Royal Ontario Museum, Toronto.

Site Characteristics

As noted above, definitive Laurentian sites are known only in southeastern Ontario. Finds of material attributable to this manifestation are very common in that area. For example, in the Trent Waterway area from Lake Simcoe to below Rice Lake, a detailed study revealed some 61 locations yielding diagnostic material (Ellis and Foster 1986). Indeed, only locations yielding Middle or Late Woodland materials were more common in that area. However, it should be stressed that the number of such sites may be overemphasized versus some other Archaic occupations because of the long, thousand or more year timespan of the Laurentian and the relatively large number of material culture items which can be considered diagnostic. In short, the large number of reported sites should not be taken to indicate that there was necessarily a population explosion although certainly, some degree of population growth seems to have been occurring. Despite the number of reported sites, few sites have been closely examined and even fewer of these have been reported in detail.

Unfortunately, excepting Allumette-1 and Morrison's-6, most of these sites are multi-component and the Laurentian material is inter-mixed with that of extensive earlier and later occupations. The Poison Ivy site on East Sugar Island in Rice Lake may be an exception. This site is said to be stratified with Archaic assemblages below Middle Woodland and other later materials (W. Kenyon 1973). Although the Archaic occupations also include a Middle Archaic stemmed point component, the Laurentian Archaic materials appear to be the most extensively represented.

Most of these sites seem to be small, briefly-used campsites although this is difficult to determine with any accuracy because of the incomplete reporting and the difficulties in sorting out the Laurentian Archaic materials from those of other components. Allumette Island-1, Morrison's Island-6 and perhaps, Brockville and Poison Ivy, seem to be exceptions. It is notable that these larger sites are all located on major lakes or rivers whereas all reported inland sites are small and ephemeral.

The Allumette Island-1 site yielded large numbers of tools including stone points and over 1000 Native copper items (Kennedy 1966:111-112). The large size of the assemblage combined with the presence of certain kinds of debris and pit features suggest it served as a major campsite. However, at least 16 burial features were also uncovered, some of which included the remains of more than one individual. Here, as at other sites of this affiliation, these individuals were interred throughout the site area, intermixed with other occupation debris. This distribution suggests they are not true "cemeteries" (i.e. areas put aside solely for the purpose of interring the deceased; see Spence 1986:86).

Osteological material from 10 of the Allumette Island-1 burial features, including the remains of 17 individuals, has been reported by Pfeiffer (1977:28-32). Adults of both sexes as well as the remains of two juveniles were included. At death, some individuals were as much as 50-60 years old. Individuals were interred largely in an extended, articulated position but at least two full or partial cremations are also reported. The burials were accompanied by grave goods but the exact nature of these grave inclusions has not been reported. Pfeiffer's (1977) analyses disclosed animal remains with several of the interred individuals. While these may be parts of largely decayed bone tools, it is also possible they represent food offerings interred with the deceased.

The Morrison's Island-6 site was also a burial and major habitation site (Kennedy 1962, 1966). Over 2000 artifacts, including 250+ Native copper tools are reported. As many as 18 burial features were uncovered and remains from these of 16 individuals were studied by Pfeiffer (1977:23-27). These ranged from infants to older adults. Both males and females are represented among the older individuals. As at Allumette Island-1, individuals over 30 years of age are well-represented. Interment was usually in an extended, articulated position. However, five burials consisted of unarticulated "bundles" of osteological remains. Several burials were sprinkled with red hematite or ochre, a treatment which continues into much later burial practises. Some of the interments were accompanied by a small number of grave goods.

The Brockville site was discovered and reported in the 19th century (Reynolds 1856) and few details of the nature of the site are available. It most certainly included burials and a "score of skeletons" accompanied by a number of chipped stone, ground stone and Native copper implements are reported.

At the Poison Ivy site, a thick occupation layer is represented containing in excess of 60 pounds of faunal remains. Most appears to be from deer but beaver, elk, otter, turtle and some fish remains are also reported (W. Kenyon 1973). The large amount of material suggests a quite substantial occupation.

Laurentian Archaic Cultural Systems

As noted above, Laurentian Archaic sites appear to be largely restricted to the Canadian biotic province. In contrast to more southerly areas, including southwestern Ontario, this biotic province has a smaller deciduous vegetation component and less in the way of important nut-bearing and thus food producing trees such as oak, shagbark hickory, sweet chestnut and black walnut.

In general, these environmental differences would lead us to expect less of a reliance on plant foods in the Laurentian in comparison to contemporary Archaic manifestations to the south alluded to earlier such as the Helton phase of Illinois and western Indiana (see T. Cook 1976). In addition, one would expect a correspondingly greater emphasis on other subsistence pursuits such as hunting and fishing in the Laurentian in order to compensate for the relative scarcity of plant foods. Impressionistically, these expectations seem to be met with available data. Although plant food processing implements do occur on Laurentian sites, they are rare compared to their occurrence on sites farther to the south. Conversely, implements of the hunt such as points are very common on Laurentian Archaic sites (W. Ritchie 1969:86, 92) and suggest a relatively greater emphasis on that activity. One would expect deer, rabbit, raccoon and squirrel to be important hunted and trapped species, and this is confirmed by faunal analyses.

Fishing was perhaps an even more important subsistence activity. Fishing implements tend to be rare on Laurentian sites but this may reflect largely poor preservation of these generally bone tools as well as nets. Moreover, it is plausible to suggest that techniques such as the use of wooden fish-weirs were important and evidence of their use would be difficult to document. In this regard, it is notable that the remains of fish-weirs have been reported from the Atherly Narrows, linking Lake Simcoe and Lake Couchiching, which are radiocarbon dated to ca. 4500 B.P. (Johnston and Cassavoy 1977). Also, many Laurentian sites in Ontario do seem to be in prime locations for fishing such as along the Trent and Ottawa Rivers. These are situated in ideal locations for intercepting fish in the spring and summer; namely, at major rapids. For example, areas adjacent to virtually every major rapids on the lower Trent River have yielded evidence of Laurentian Archaic occupation (Ellis and Foster 1986).

In contrast to earlier sites in Ontario, Laurentian ones are more common and this suggests increasing populations. Another contrast is the greater use of more local stone sources in tool manufacture and this suggests decreases in the size of the territories exploited. Other contrasts with earlier sites suggest decreasing residential mobility; that is, groups resided for longer periods of the year in certain locations and overall, moved their camps fewer times throughout the year. For example, some sites with thick middens and/or large amounts of occupation debris such as Poison Ivy, Allumette Island-1 and Morrison's Island-6 are suggestive of longer occupations in one location. Moreover, the large number of less portable tools such as the wood-working items are indicative of a less portable tool kit and hence, decreased mobility. However, this inference should be tempered with caution as the gouges and adzes in particular are suggestive of the construction of transportation aids such as canoes which could offset portability problems.

Also suggestive of decreasing mobility is the presence of sites with several interments suggesting longer occupations and thus, burial in the same general locations. Yet, to some extent, this is also an oversimplification. First, it may suggest simply that the same campsite locations were consistently used at certain seasons for a greater number of years than was the case at earlier sites. Second, as noted earlier, some of the burials consist of unarticulated bone bundles rather than primary articulated interments. As has been suggested for similar situations at sites elsewhere (e.g. Snow 1980:216), this may suggest these bundles represent secondary burials or individuals who died during other times of the year when the groups were residing in different locations. Then the remains were transported to the burial locations during seasons of the year when those locations were occupied. This practice would increase the number of individuals interred in the same location regardless of settlement mobility. This being the

case, transportation of remains for interment at certain sites would suggest local groups may have had ceremonial or religious ties to certain specific locations.

Although there are very little data upon which to construct models of settlement and subsistence, most investigators have postulated a seasonal cycle of movement involving two basic settlement types (see W. Ritchie and Funk 1973:339-341). In the spring and summer, as represented at large sites such as Allumette Island-1, populations aggregated in locations along the more open and exposed major waterways where fishing was a major economic activity. The presence of interments at these sites and the suggestion some individuals died elsewhere and were transported to these sites for burial, might indicate interment was accompanied by group ritual activities and that such group ritual in general was also an important activity at these population aggregations. In the cold months, hunting and trapping would have been the only major viable economic pursuits. In the absence of any fauna which would be available in quantity to allow continued population aggregation, and the lack of any evidence for extensive reliance on stored food surpluses, it is plausible to suggest that the major group broke up at this time into smaller social units such as extended families who occupied the smaller, more sheltered camps away from waterways.

Southwestern Ontario: The Laurentian Archaic?

Broad-bladed side- and corner-notched points similar to those in the Laurentian are commonly found in collections throughout southwestern Ontario. These similarities suggest they are of a similar age even though none have been recovered from radiocarbon dated sites. Nonetheless, the occurrence of comparable forms in eastern Michigan dated to between 6200 and 4500 B.P. at the Weber I site (Lovis 1989) suggests the finds from adjacent southwestern Ontario are of the same age. Moreover, Ellis and Deller (1986:57) have reported points resembling Brewerton corner- and side-notched forms from sites such as Pascoe in the vicinity of the modern southeastern Huron basin. These items had been water-rolled by the high water stage of post-glacial Lake Nipissing in the area. Hence, they must be of a contemporary or older age than that lake or older than ca. 4500 B.P. (Karrow and Warner: this volume).

Despite the presence of these Laurentian-like point forms, and as stated earlier, no Laurentian sites *per se* in the strict sense of W. Ritchie (1940, 1969) have been reported from southwestern Ontario. That is, actual sites including these point forms in association with the range of ground stone items discussed above are lacking. In addition, there are suggestions that some of the very specific tool forms often reported from Laurentian sites are very rare in southwestern Ontario. For example, J. Wright (1962) examined the distribution of several Archaic groundstone tool forms in southern Ontario housed in museum collections. Of the forms for which sizeable and one presumes reliable samples were available, artifacts such as ground slate points were restricted largely to southeastern Ontario and were extremely rare in southwestern Ontario. As well, studies of the distribution of some of the distinctive copper tools described earlier have suggested they are much more common in southeastern Ontario (Popham and Emerson 1954:13-15; R. Vastokas 1970:148; Wintemberg 1931:79-80).

Given these considerations and as alluded to above, it may be premature to refer these assemblages to a Laurentian Archaic. This caution is also suggested since we know broad-bladed, notched forms occur in non-Laurentian contexts south of the Great Lakes, as in the aforementioned Helton phase of Illinois. In fact, it may be that these southwestern Ontario assemblages are more closely related to such assemblages. For example, J. V. Wright's (1962) distributional studies suggested grooved axes are largely restricted to southwestern Ontario (see also Wintemberg 1931:73). These are not found in Laurentian contexts but as noted above, are commonly recovered with the broad-bladed point forms throughout the mid-continent. Also, some of the broad-bladed points reported from southwestern Ontario (e.g. R. Parker 1986a, 1986b) with their straight bases and very wide basal corners, seem to more closely resemble specific types reported from Illinois such as Godar points (see Perino 1963; T. Cook 1976), rather than Laurentian forms such as Otter Creek. However, in the absence of any extensive work on the Middle Archaic assemblages of southwestern Ontario, these ideas must remain largely speculation.

Summary

As with the Early Archaic, the Middle Archaic period is relatively unknown in southern Ontario. The Laurentian Archaic of southeastern Ontario between ca. 5500 and 4500 B.P. is somewhat of an exception but much more work is still needed even on that material. Despite the paucity of the data base, there are certainly suggestions that it was during the Middle Archaic that many distinctive artifactual traits often considered characteristic of the Archaic as a whole first appear. These include fully ground and polished stone tools, specific tool forms such as bannerstones and net-sinkers and the increasing use of local and non-cherty raw materials in stone tool manufacture.

At least by around 5500 B.P., there are indications of increasing populations, decreasing size of territories exploited on an annual round, reduced residential mobility or fewer moves of residential camps throughout the year with longer occupations at seasonal campsites, continuous use of certain locations on a seasonal basis over many years, increasing attention to ritual associated with the deceased and, as is evident in the widespread distribution of Native copper tools, long range exchange for the purposes of obtaining valued and geographically localized resources.

The reasons for these changes are obscure although some (e.g. R. Ford 1974b:392-394; Meltzer and Smith 1986:19-20; Steponaitis 1986:372-375) have suggested these changes are responses to increasing populations which, at least in some areas, may have been favoured by the appearance of more stable and productive environments. For example, increasing populations would have placed restrictions on the movements of local groups and favoured smaller territories. In turn, groups would be forced to occupy on a longer term basis and for longer periods certain relatively productive localities, whereas previously, with larger territories, several alternative locations would have been available. The result is larger sites. Moreover, increasing use of more limited territories could have favoured more intensive use of available resources and favoured the consistent appearance of specialized procurement and processing tools designed to increase the yield of available resources such as plant-processing tools. Being able to obtain a greater yield from local resources would not only allow the support of greater populations but also would favour longer occupations in the vicinity of such resources and reduced residential mobility. In addition, given variability in resources by geographic area, one might expect increasing regional variation in technology or exploitative equipment. Finally, by restricting territory size, access to certain geographically localized and "valued" resources would be restricted. One means of overcoming this would be the development of long-distance exchange networks such as those involving Native copper.

Late Archaic (ca. 4500 to 2800 B.P.)

The beginning of the Late Archaic is considered here to be ca. 4500 B.P., although this date is arbitrary. It ends with the beginning of the ceramic-using Meadowood phase at roughly 2800 B.P. Much more is known about the Late Archaic in Ontario than for either the Early or Middle Archaic. A number of Late Archaic sites are known (e.g. Table 4.1; Figure 4.17), some with excellent faunal preservation, and several of these have been excavated. The extent of information, when compared to earlier times, is reflected by the number of radiocarbon dates available for the Late Archaic (Table 4.2). In part, this expansion of knowledge may indicate an increase in population towards the end of the Archaic, so there may be simply more Late Archaic sites to be found. But also to be considered is that after 4500 B.P. the Great Lakes began to assume their modern water levels. Undoubtedly, many Early and Middle Archaic sites have been destroyed through erosion or inundated by the changing post-glacial water levels of the Great Lakes. Despite the increase in information for the Late Archaic, many of the best studied Late Archaic sites are in southwestern Ontario, so that much of what follows is coloured by this geographic bias.

In Robert Funk's (1983) synthesis of Northeastern prehistory he identifies three successive complexes in Ontario for the ca. 4500-3000 B.P. period which, from early to late, he terms "Lamoka", "Satchell" and "Inverhuron". This tripartite division is used below, although following the practice of previous sections, these divisions are named after their characteristic projectile points -- Narrow Point, Broad Point and Small Point. We tend to see these

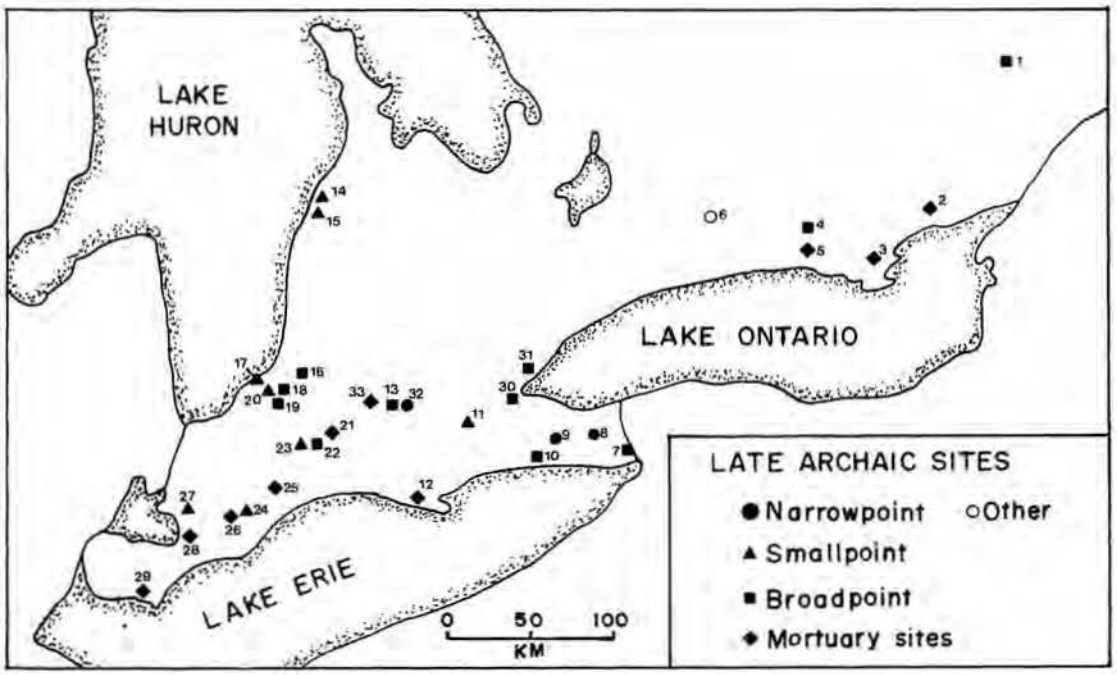

FIGURE 4.17: Location of Some Late Archaic Sites in Southwestern Ontario. For key to site names see Table 4.1.

three complexes as primarily representing changes through time. However, we cannot be sure that there is a lack of some degree of temporal overlap between these complexes. Indeed, it may be that some of the more widespread manifestations such as Broad Point appeared slightly earlier in certain areas than in others, but present data does not provide easy answers to this question. Neither can we be sure that this tripartite division encompasses all Late Archaic manifestations in southern Ontario. In fact, certain occupations in southeastern Ontario, and particularly some of those represented at the McIntyre site, do not easily fit into these divisions. Thus, that particular site will be discussed separately, following consideration of the major manifestations.

Narrow Point Archaic

About ca. 4500-3800 B.P. archaeological complexes characterized by narrow projectile points appeared in certain parts of northeastern North America. Typical of Narrow Point sites are stemmed or broadly side-notched points, often coarsely flaked, and usually more than twice as long as they are wide. In New York, a number of separate but similar point forms have been named, including the Lamoka and Normanskill types (Figures 4.18, 4.19; W. Ritchie 1971b).

This narrow point using tradition or complex has received a confusing variety of names including Appalachian, Atlantic Slope (Dincauze 1971), Piedmont (Kinsey 1972), Mast Forest Archaic (Snow 1980), and Narrow Point (Funk 1976). Compared to Laurentian, Narrow Point sites tend to have a more southerly distribution, being well-represented in the mid-Atlantic, New York state and southern New England. Snow (1980) regards Narrow Point, which he identifies with the Mast Forest Archaic, as an adaptation to nut or mast producing forests (such as the Carolinian biotic zone); in contrast, he sees Laurentian as a "Lake Forest" (Canadian biotic zone) manifestation. There is some suggestion that Laurentian and Narrow Point may overlap in time about 4500-4000 B.P., at least in areas

TABLE 4.1: Some Late Archaic Sites in Southern Ontario.

MAP #	SITE NAMES	ASSIGNMENT*	REFERENCES
1	Rideau Lake Sites	B	Watson 1981.
2	Collins Bay	G	W. Ritchie 1955.
3	Picton	G	W. Ritchie 1949a.
4	McFarlane #1	B	Ellis and Foster 1986.
5	Trenton Mountain	G	Wintemberg 1928a.
6	McIntyre	B, O	Johnston 1968b, 1984.
7	Surma	B	Emerson and Noble 1966;I. Kenyon 1981.
8	Canada Century	N	Paul Lennox: personal communication.
9	Spyksma Sites	N	Ellis 1979b.
10	Selkirk	B	Stothers 1974c.
11	Innes	S	Lennox 1986a.
12	Bruce Boyd	H	Spence et al. 1978.
13	Cierach	B	Jack Redmond: personal communication.
14	Inverhuron/Rocky Ridge	S	W.Kenyon 1959; P. Ramsden 1976.
15	Knechtel I	S	J. Wright 1972d.
16	Parkhill	B	Deller 1980a; J. Fisher 1987a, 1987b.
17	Port Franks	G	Jury 1978.
18	Davidson, Sadler, etc.	B	I. Kenyon 1980a, 1980b.
19	Adder Orchard	B	I. Kenyon 1983.
20	Thedford II	S	Deller and Ellis 1982; Deller et al. 1986.
21	Blackfriar's Bridge	G	Spence and Fox 1986:12.
22	Brodie, etc.	B	J. Fisher 1987a, 1987b; I. Kenyon 1980b.
23	Welke-Tonkonoh	S	Muller 1988, 1989.
24	Zimmer	G	Donaldson 1966.
25	Hind	G	Spence and Fox 1986; Pfeiffer 1977.
26	Meredith-Goodal	G	Coppetiers and Boseveld 1966.
27	Crawford Knoll	S	I. Kenyon 1980c.
28	Caron	G	Spence and Fox 1986:12.
29	Sartori	G	Carey 1981.
30	Hamilton Golf Club	B	Howey 1977; Kenyon 1980b.
31	Britannia Road Site	B	A. Roberts 1985:227.
32	Winter	N	P. Ramsden n.d.
33	Schweitzer	G	Spence and Fox 1986:13.

* B: Broad Point; N: Narrow Point; S: Small Point; G: Glacial Kame Mortuary Site; H: Haldimand Complex Mortuary Site; O: Other.

such as central New York (e.g. W. Ritchie 1971a). The paucity of "late" Laurentian dates from sealed components, however, limits any firm conclusions about the question of chronological overlap.

Numerous Narrow Point sites have been excavated in New York (e.g. Funk 1976), southern New England (e.g. W. Ritchie 1969; Pagoulatos 1988) and Pennsylvania (Kinsey 1972). Perhaps most relevant to Ontario archaeology are the Lamoka phase sites of central and western New York, especially Lamoka Lake (W. Ritchie 1932b, 1969:36-79) and Cole Gravel Pit or Farrell (Hayes and Bergs 1969; C. Brown et al. 1973). Lamoka Lake is the "type site" upon which W. Ritchie (1932b) based his formulation of the Archaic stage of prehistory. It has a good series of radiocarbon dates suggesting initial occupation around 4500 B.P. Two carbon dates of 3980 ± 160 and 3890 ± 120 B.P. indicate that Cole was inhabited close to the end of Narrow Point times. A characteristic artifact

TABLE 4.2: Late Archaic Radiocarbon Dates for Ontario*.

SITE	TYPE**	B.P. DATE	LAB #	CALIBRATED DATE RANGE (B.C.)	REFERENCE
Davidson	B	3780 ± 85	I-10313	2535-1950	I. Kenyon 1980a:20.
Adder Orchard	B	3850 ± 90	I-12480	2640-2090	I. Kenyon 1983:9.
Parkhill	B?	3400 ± 210	I-8866	2175-1365	Deller et al. 1986.
McIntyre	?	3650 ± 110	I-9068	2325-1760	Johnston 1984:74.
McIntyre	?	3675 ± 90	I-9312	2390-1775	Johnston 1984:74.
McIntyre	?	3650 ± 85	I-9313	2325-1760	Johnston 1984:74.
McIntyre	?	3660 ± 95	I-9314	2385-1770	Johnston 1984:74.
McIntyre	?	3700 ± 90	I-9315	2515-1870	Johnston 1984:74.
Crawford Knoll	S	3480 ± 120	TO-920	2125-1650	Ferris 1988:5.
Innes	S	3350 ± 195	I-13061	2140-1315	Lennox 1986a:265.
Innes	S	2620 ± 80	I-13062	1025-440	Lennox 1986a:265.
Knechtel I	S	3250 ± 90	S-504	1760-1365	J. Wright 1972d; Wilmeth 1978:125-126.
Knechtel I	S	2888 ± 45	BGS-34	1310-880	J. Wright 1972d; Wilmeth 1978:125-126.
Knechtel I	S	3690 ± 45	BGS-35	2315-1895	J. Wright 1972d; Wilmeth 1978:125-126.
Knechtel I	S	3040 ± 40	BGS-37	1505-1110	J. Wright 1972d; Wilmeth 1978:125-126.
Rocky Ridge Inverhuron	S	3100 ± 120	Gak-2851	1655-1110	P. Ramsden 1976:44.
'M'	S	2850 ± 60	S-60	1245-835	Wilmeth 1978:125.
Hind	G	2920 ± 170	Gak-3974b	1520-805	Wilmeth 1978:124.
Hind	G	2875 ± 75	S-1061	1260-870	Wilmeth 1978:124.

*Excludes 'bad' dates from Adder Orchard, Rocky Ridge, Knechtel I, Innes, Crawford Knoll and Hind.
**B: Broad Point, S:Small Point, G:Glacial Kame.
Calibrations based on Klein et al. 1982.

type at Lamoka Lake and Cole is an adze with beveled or facetted side margins, regarded by W. Ritchie (1969:32) as diagnostic of the Lamoka phase. Common at both Lamoka and Cole are rough stone mullers, pestles and pitted stones suggesting the processing of plant foods, especially nuts, was a significant activity. At Lamoka, acorn shell is reported to be common. Both Lamoka and Cole have good bone preservation, and a variety of tools and ornaments are present, including awls, needles, bone gouges, antler flakers, fishhooks, flutes and barbed points. Animal remains indicate an emphasis on mammals such as deer, squirrel, bear and raccoon. Birds, especially turkey and the now-extinct passenger pigeon, are common. Fish, in contrast, are not well-represented, although Lamoka is located by an inland lake and Cole by the Genesee River. Scattered throughout habitation areas at Cole and Lamoka Lake are flexed "in-flesh" burials; most do not have elaborate grave goods.

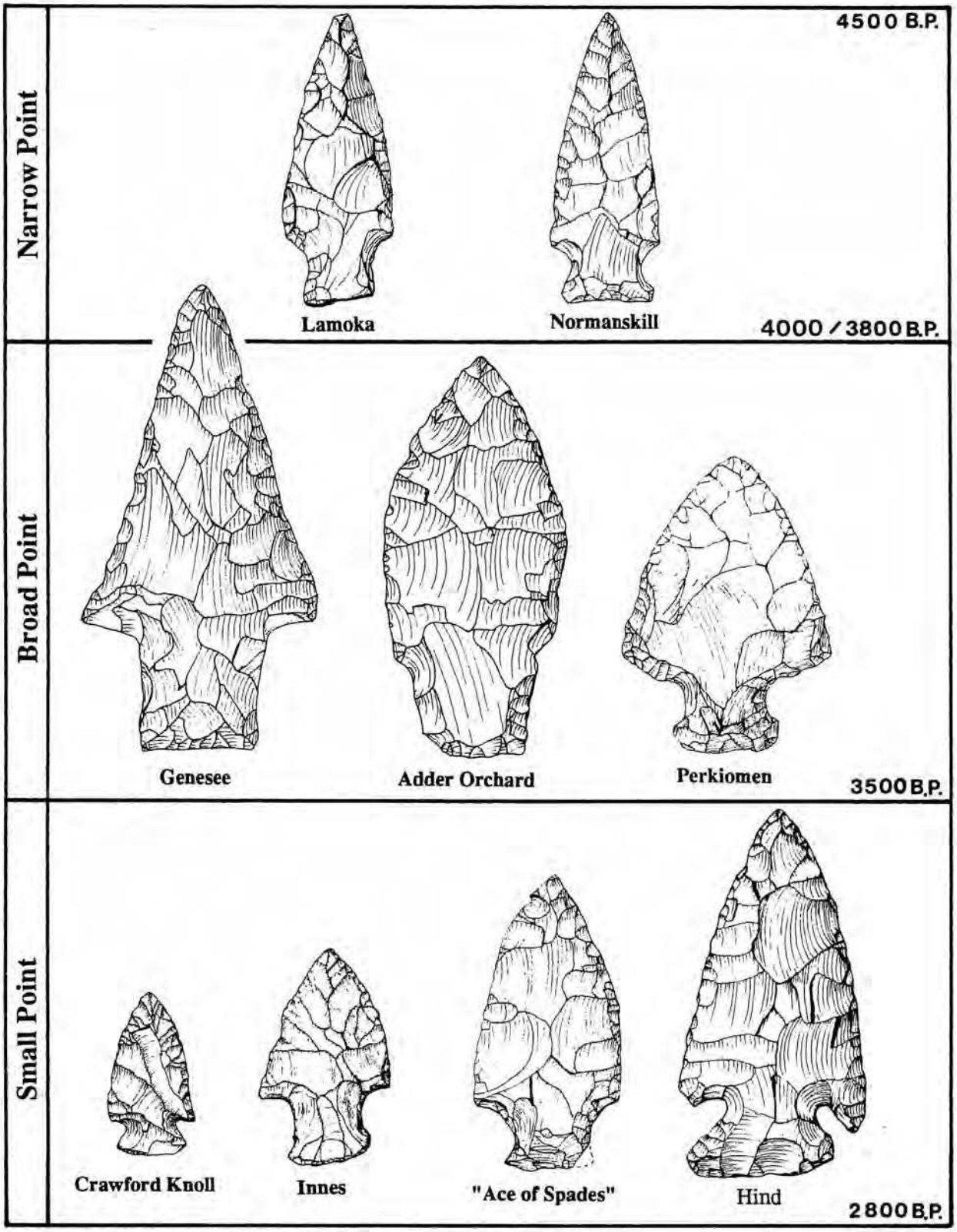

FIGURE 4.18: Late Archaic Point Types in Southern Ontario (Actual size).

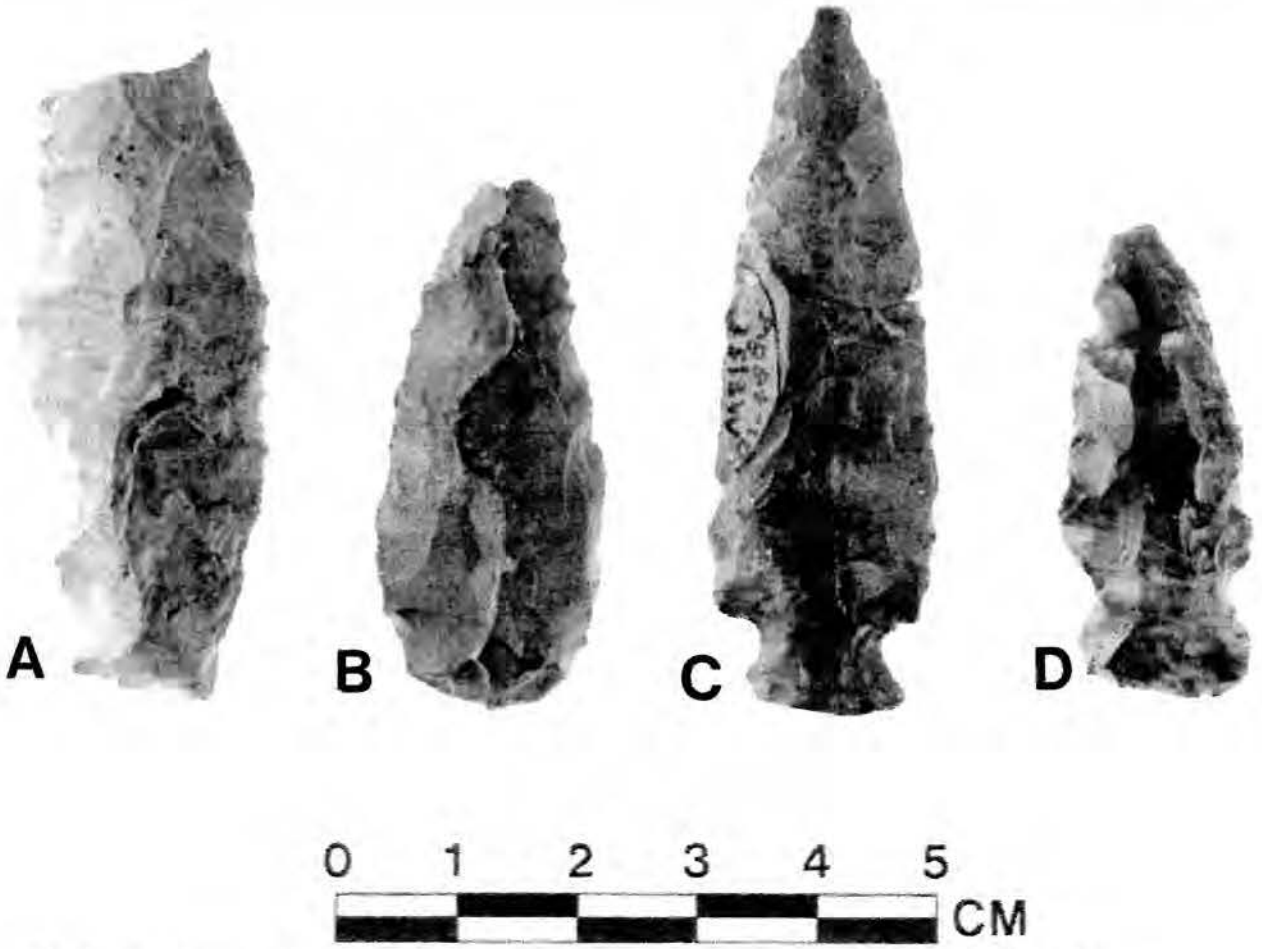

FIGURE 4.19: Lamoka Points and Preforms from the Canada Century Site. A-B: Preforms; C-D: Points.

Distribution in Ontario

W. Ritchie (e.g. 1944) has always considered his Lamoka phase as extending into the Niagara Peninsula and along the north shore of Lake Ontario. In fact, narrow points similar to those from New York state have been reported throughout much of southern Ontario. These, however, are largely represented only by scattered surface finds (e.g. A. Roberts 1985). Without better context it is difficult to assess the degree to which a Narrow Point Archaic even exists in Ontario. There are presently no carbon dates for Ontario, nor any good information on settlement/subsistence patterns and burial modes. If Narrow Point reflects a mast forest adaptation as Snow and others suggest, then its Ontario distribution should be confined to areas where oak and hickory are relatively common: counties bordering Lake Erie, the southern Huron basin, and the north shore of Lake Ontario.

W. Ritchie (1969) noted the presence of characteristic beveled Lamoka adzes in the Niagara Peninsula, and surface surveys suggest that Narrow Point sites might be relatively common in this area. Ellis (1979b), Lennox (1976 and personal communications), Pengelly and Pengelly (1986) and Parkins (1977), for example, report several sites with Lamoka points in the area such as the Spyksma sites and the Canada Century site (Figures 4.17, 4.19). Of these sites, only Canada Century has seen some degree of excavation (Paul Lennox: personal communication). Parkins (1977) study to determine the geological sources of cherts used by Lamoka knappers on some Welland River sites remains the only detailed study of some of this Niagara Peninsula material.

Typologically "good" Lamoka points also occur outside the Niagara Peninsula in southwestern Ontario as far west as at least London (e.g. Figure 4.18). Yet, few actual sites have been located and only one of those, the Winter site near Guelph (P. Ramsden n.d.), has been excavated. The small assemblages from that site and Canada Century makes it difficult to infer much about the Narrow Point occupation of Ontario. However, if these sites are any guide, the chipped stone tool kit associated with the Lamoka points is not that much different from that of later Archaic complexes to be described below, being dominated by a range of simple tools such as flake scrapers, gravers or piercers, spokeshaves and wedges.

Broad Point Archaic

Introduction

During the Late Archaic, cultures using large, broad-bladed, stemmed points occur over much of the Eastern Woodlands. This phenomenon is so widespread -- ranging from Maine to Florida to the American Mid-west -- that it is extremely unlikely broad points represent the existence of a single tradition. Rather it seems that during the 4500-3500 B.P. period a number of diverse local Archaic groups adopted a weapons system requiring the use of these sometimes massive points.

If broad points have some common historical connection, then it is likely that this technology originated in the American Southeast where the use of broad points was well-established by 4500 B.P. (Turnbaugh 1975). In the Southeast, representative Archaic cultures using broad-bladed stemmed points include the Stalling's Island complex of the Georgia coastal plain (Stoltman 1974), the Mount Taylor and Orange cultures of Florida (Milanich and Fairbanks 1980), and the Lauderdale phase of Alabama (Walthall 1980).

In the Northeast, broad point using complexes appear in the archaeological record so abruptly that some archaeologists believe there were substantial movements of people at this time. For example, along the mid-Atlantic coast, the Susquehanna tradition, characterized by a variety of broad-bladed points, has been interpreted as a northward push of bands adapted to the exploitation of anadromous fish, such as shad and alewife (Turnbaugh 1975, but see T. Cook 1976). Likewise, in Illinois the broad point using Titterington complex is thought by some to represent a population intrusion from the west (McElrath et al. 1984). While there may well have been local population movements (e.g. Snow 1980), a more parsimonious explanation for the "sudden" appearance of broad points over much of the Northeast is technological diffusion, especially in view of indications that in certain areas "traditional" narrow point forms continued to be used alongside broad points (Dincauze 1975).

The best studied group of broad point sites in the Northeast pertain to the Susquehanna (or "Broadspear") tradition, the core area of which extends along the Atlantic coast from Pennsylvania and New Jersey, north to southern New Brunswick, and inland to upstate New York (e.g. Snow 1980; Funk 1983). A variety of point forms is associated with the Susquehanna tradition. The earliest points have slightly contracting stems, and a babel of names: Lehigh in Pennsylvania, Koens-Crispin in New Jersey, Snook Kill in New York and Atlantic in New England -- they are all variations on the same theme. In locales where good quality cherts are rare, coarse-grained igneous and metamorphic rocks may be used as a raw material for producing these points (Dincauze 1972:41-42); for example, rhyolites in southern New England and argillite in Pennsylvania and New Jersey. A possibly related point type is the straight-stemmed Genesee, first defined for New York (W. Ritchie 1971b), and characteristic of what Funk (1976) calls the "Batten Kill" phase. Radiocarbon dates from New York, Pennsylvania and New England suggest a date of ca. 3800 B.P. for these various stemmed forms. About 3600 B.P. a wide-bladed, notched point called the Perkiomen was in common use in the Susquehanna tradition and after ca. 3600 B.P. the typical point form, the Susquehanna Broad, features a narrower blade and an expanding stem.

Associated with Susquehanna tradition sites in the mid-Atlantic is the use of soapstone vessels, bannerstones, grooved axes and the presence of cremation cemeteries often accompanied by a variety of grave goods, especially caches of points and preforms.

Distribution in Ontario

While the Susquehanna tradition in its strict sense may only be marginally represented in Ontario, particularly in the Niagara Peninsula, there are sites throughout southern Ontario seemingly related to the general broad point phenomenon of eastern North America (Figure 4.17). There is no evidence that Ontario Broad Point sites represent intrusion of peoples from the south; rather it would appear that this was a weaponry system "grafted" onto the existing technology of hunting and gathering peoples native to Ontario.

Artifact Assemblages

Genesee Points

The most common and widely distributed broad point type in Ontario is the Genesee. Found throughout southern Ontario, the Genesee is most abundant in the Carolinian forest zone (Burgar 1985). The Genesee point has a broad blade with a squarish or slightly contracting stem (Figures 4.18 and 4.20). In outline it has the "Christmas Tree" form typical of broad points in the American Southeast, such as the Savannah River type (Coe 1964). In Ontario, the Davidson site in the Ausable valley has a Genesee component radiocarbon dated to ca. 3780 B.P. (I. Kenyon 1980a, 1980b). Elsewhere in the Northeast, broad-bladed, straight-stemmed points similar to the Genesee, and the apparently related contracting stemmed Snook Kill points, are radiocarbon dated to about 3850-3650 B.P.

Like stemmed points of the mid-Atlantic coast, Ontario Genesee points may be made from coarse-grained rocks in areas where there were no suitable supplies of chert. In southcentral Ontario, where access could be had to the good quality Onondaga chert outcrops of the Niagara Peninsula, Genesee points are almost invariably made from this material. To the west in the Ausable (I. Kenyon 1980b; J. Fisher 1987a) and Thames River (J. Fisher 1987a) drainages, where local cherts (Selkirk and Kettle Point) are difficult to find in large flaw-free blocks, metasediment lithics such as greywacke were often used for point manufacture. Similarly, in eastern Ontario, where good chert sources are scarce, red quartzite is typically used for making broad points in the Rideau Lake area (Watson 1981) and black siliceous argillite in the Trent valley (Ellis and Foster 1986).

Distinctive of Genesee and other broad points is their manufacturing or reduction sequence. A suitable piece of raw material is edged and thinned to form an ovate or triangular preform. Then, during secondary thinning, a five-sided or pentagonal preform is produced approximating the size of the finished point (Figure 4.21). These characteristic pentagonal bifaces are sometimes termed "corner-removed points" or "Susquehanna knives", but their true function was that of a preform for Genesee and other broad point types, as shown in Witthoft's pioneering 1953 study (see also Dincauze 1968). At Fort Erie on the Niagara River, adjacent to an outcrop of Onondaga chert, a Genesee point production centre can be identified at the multi-component Surma site (Emerson and Noble 1966). At Surma, a complete reduction sequence was represented by ovate/triangular preforms, pentagonal preforms and finished Genesee points (I. Kenyon 1981). The pentagonal Onondaga preforms are rarely found outside of the Onondaga chert source area (the Niagara Peninsula) but some were distributed as far west as the southeastern Lake Huron basin (J. Fisher 1987a, 1987b).

Burgar (1985) has conducted a detailed study of the distribution and formal variation of the Genesee point in Ontario. This analysis indicates a number of regional variants, which may be associated with band hunting ranges or territories.

Other Broad Point Forms

Several other point types found in Ontario can be assigned to the Broad Point Archaic. These include Perkiomen and Susquehanna Broad (W. Ritchie 1971b), best known in New York and Pennsylvania, with related forms occurring in New England (Dincauze 1968). These too are made from pentagonal preforms (Figure 4.21a-b, e-f). On Perkiomens the diagonal corner of the preform is notched, often leaving the five-sided outline of the original preform visible in the finished point, which may have distinctive "pointed" shoulders above the notches. The Susque-

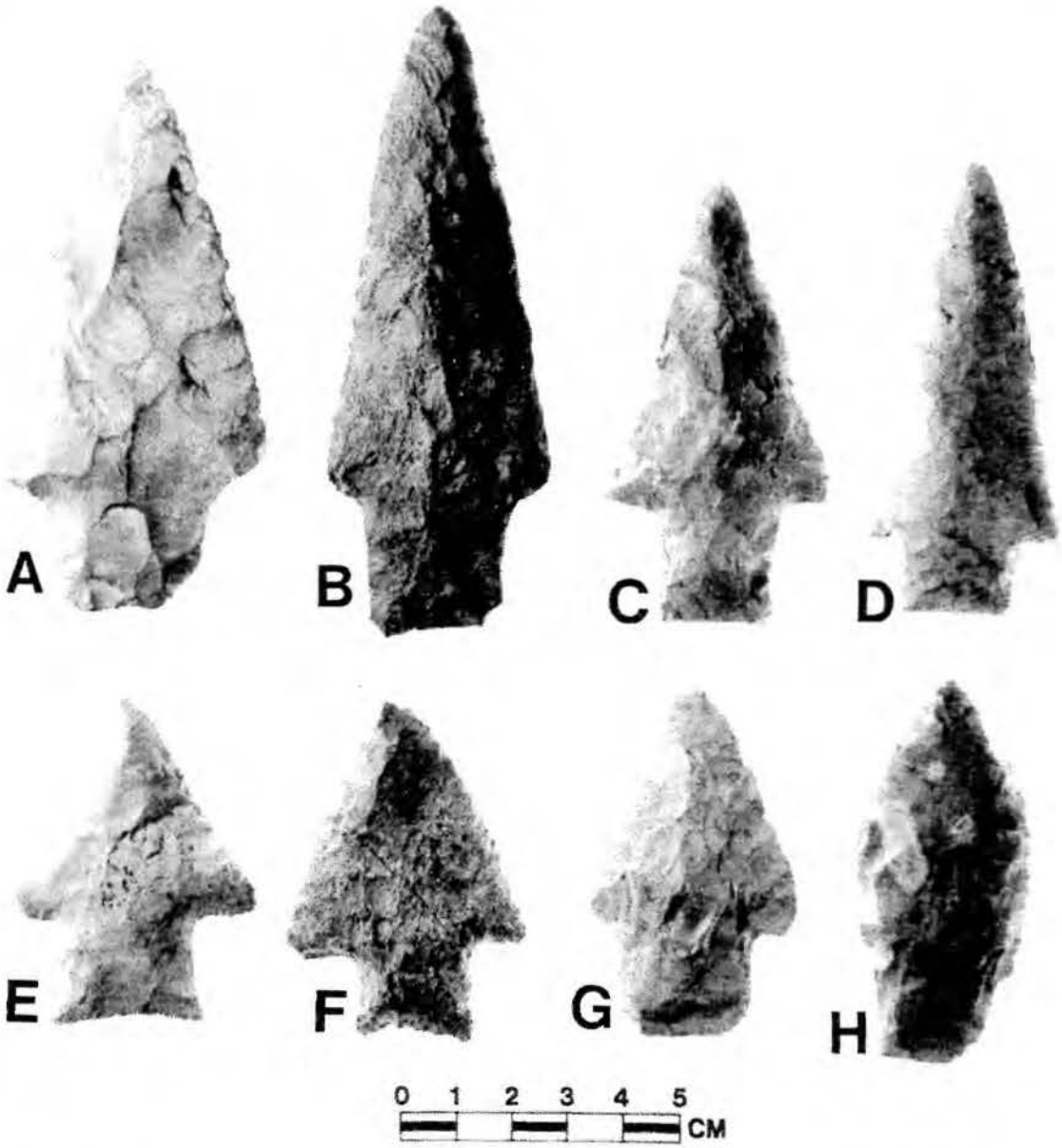

FIGURE 4.20: Late Archaic Broad Points from Southern Ontario. A-G: Genesee; H: Adder Orchard Type. A: Siltstone; B: Sub-Greywacke; C-H: Cherts.

hanna point is proportionately narrower but also made on a pentagonal preform, finished by flaking a v-shaped notch to produce the hafting element. "Classic" Perkiomen and Susquehanna points are not common in Ontario, being restricted largely to the Niagara Peninsula. No Perkiomen or Susquehanna point producing sites have been radiocarbon dated in Ontario, but elsewhere in the Northeast the Perkiomen is dated to about 3650-3550 B.P. and the Susquehanna to about 3550-3200 B.P.

Adder Orchard (Figures 4.18, 4.20h) is a straight-stemmed form found in southwestern Ontario (Ferris and Kenyon 1987). It differs from the Genesee in that the blade is much more slender, with the maximum width occur-

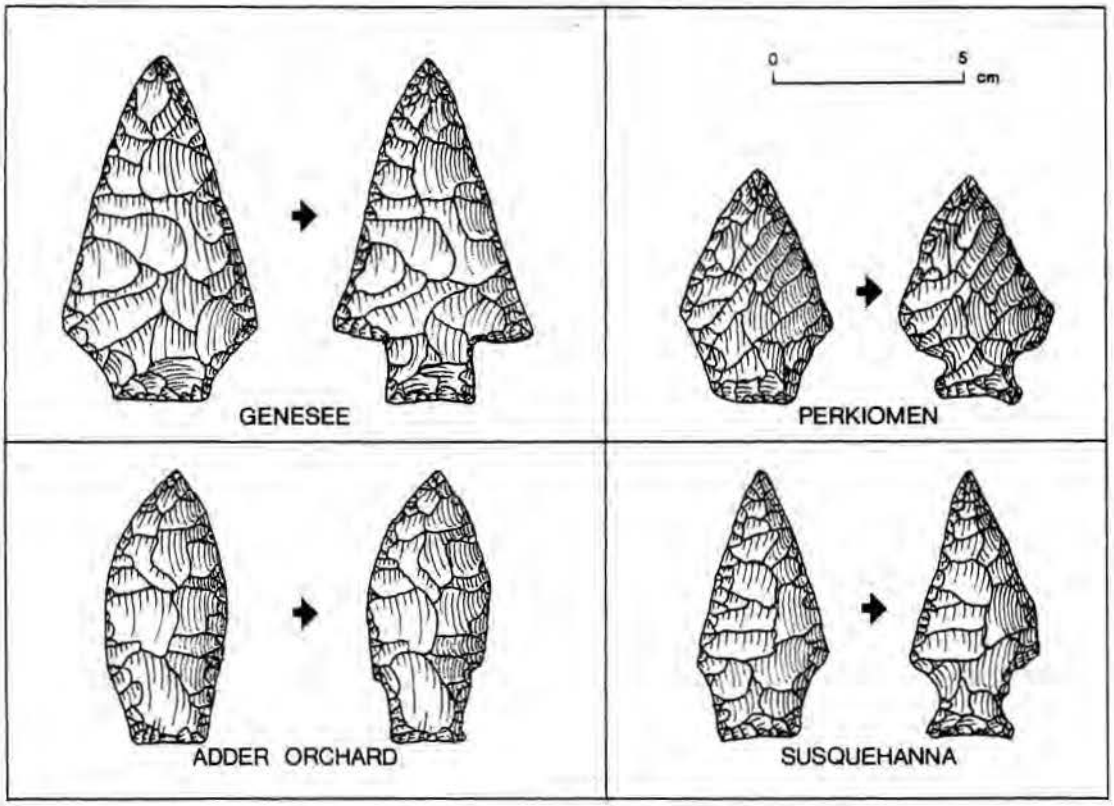

FIGURE 4.21: Late Archaic Broad Point Types and Related Pentagonal Preforms.

ring above the shoulder. These are best known from the Adder Orchard site in the Ausable valley (I. Kenyon 1983) where they are made from a variety of raw materials; many from the locally available Kettle Point chert, some from Onondaga, and only a few from coarse-grained metasediment lithics. Similar points have been found at the Pinegrove Cemetery site (named after a modern cemetery -- it is an occupation site) in the Saginaw valley of Michigan (Simons 1972, 1979). It has been suggested that the Adder Orchard point form develops from the Genesee as a "western" variant in southwestern Ontario and southeastern Michigan (I. Kenyon 1983). The few radiocarbon dates for Adder Orchard points are equivocal. In Ontario the Adder Orchard site has a radiocarbon date of 3850 ± 90 B.P., while the Pinegrove Cemetery site has determinations of 3010 ± 110 and 3305 ± 135 B.P.

In many local sequences in eastern North America, broad points dating to sometime between 4500 and 3500 B.P. are often the largest "projectile points" used at any time from Paleo-Indian times onwards. These wide-stemmed, wide-bladed and often clunky bifaces seem to some investigators to have been unlikely to have functioned effectively as projectile points, and it has been suggested that "broad points" were, in fact, knives (e.g. T. Cook 1976; Stothers 1983a; Dunn 1984). We suspect that some of these bifaces were used as knives but others have the distinctive tip impact fractures characteristic of projectile point use (J. Fisher 1987a:16).

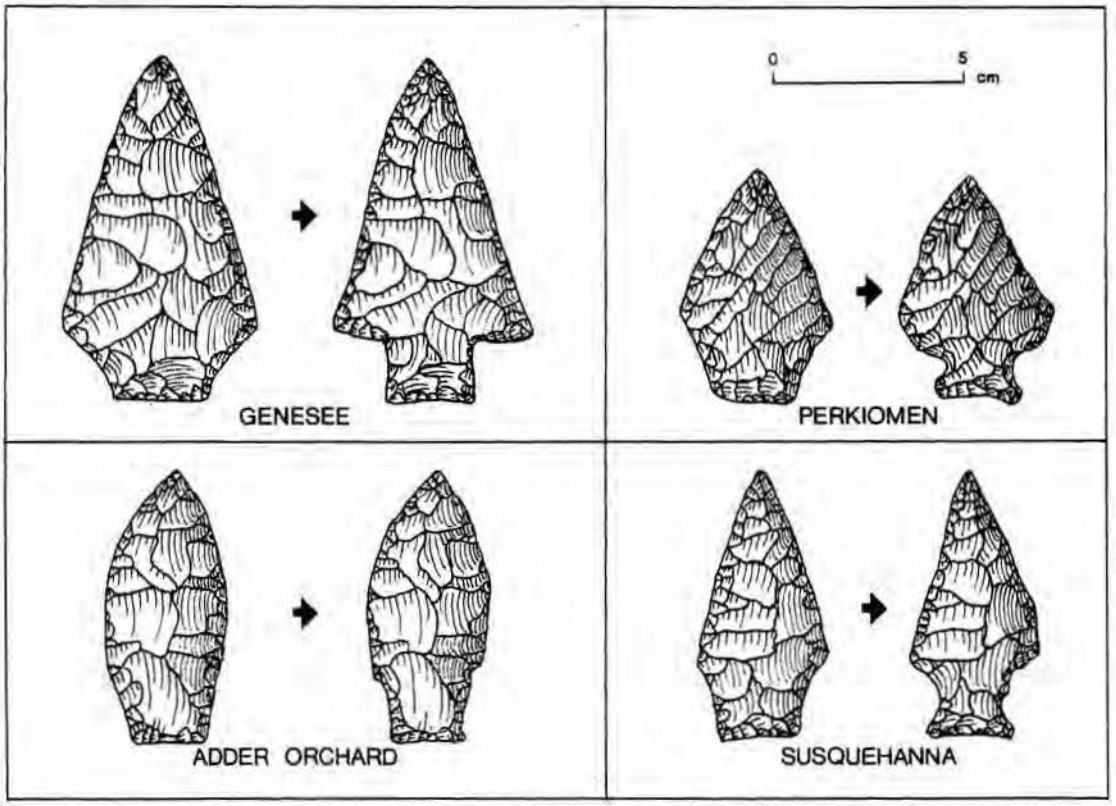

FIGURE 4.21: Late Archaic Broad Point Types and Related Pentagonal Preforms.

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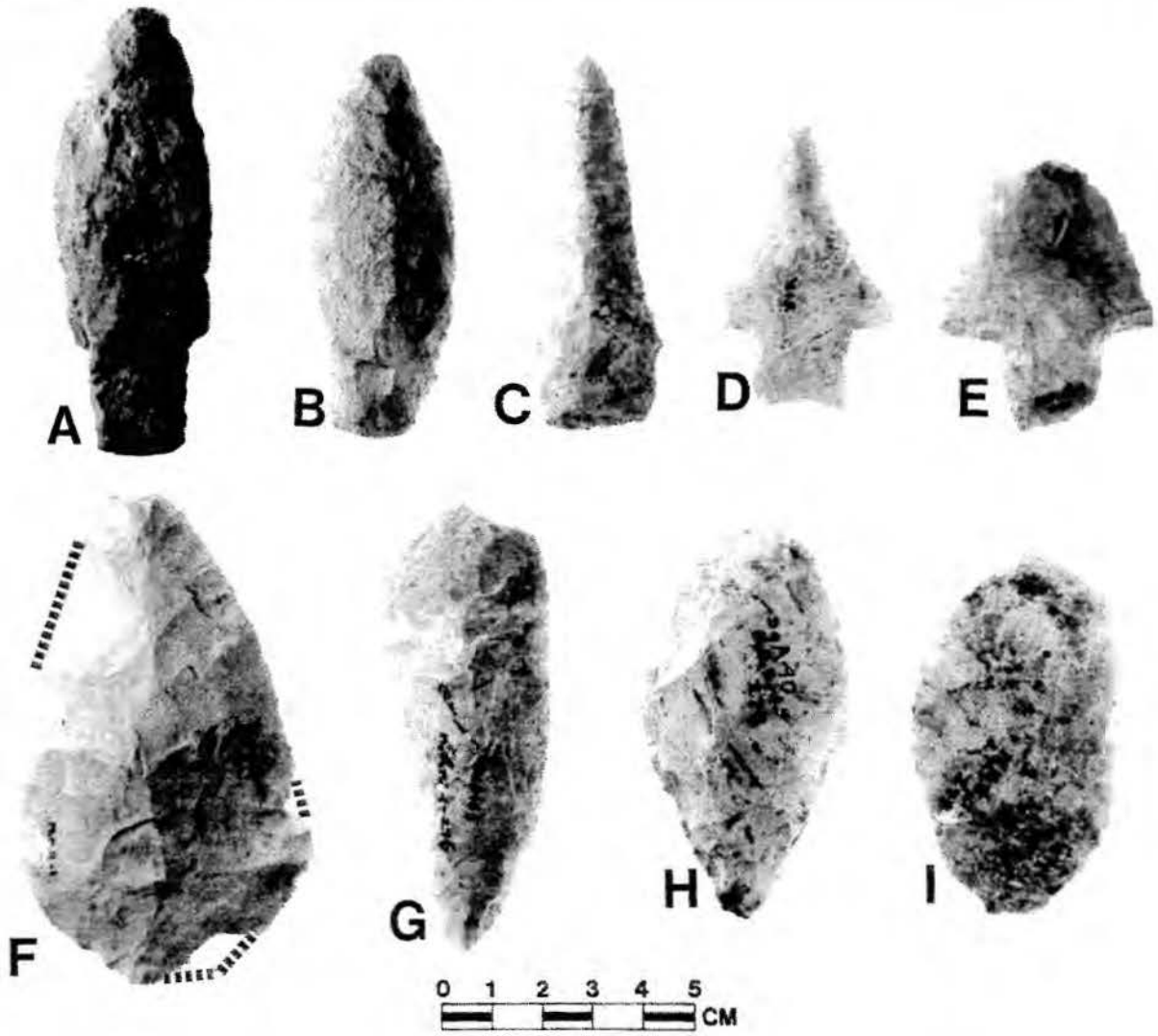

FIGURE 4.22: Broad Point-Associated Artifact Forms. A-B: Stemmed and Lanceolate Bifaces With "Rounded" Tips; C-D: Points Reworked into Drills; E: Point Reworked into End Scraper; F: Pentagonal Preform; G-I: Large Bifacial End Scrapers.

Other Tool Types

Genesee points are sometimes reworked into other tool forms, especially drills and end scrapers (Figure 4.22c-e). Characteristic of broad point sites in extreme southwestern Ontario are lanceolate bifaces, usually made from coarse-grained lithics (I. Kenyon 1979b, 1980b). The tips of these bifaces, and some of the stemmed points, have a distinctive rounding use wear, possibly from hide-working (Figure 4.22a, b).

On Broad Point Archaic sites east of the Great Lakes, such as the Atlantic phase in Massachusetts, tool kits can include large, often bifacially worked end scrapers with trianguloid to ovoid outline shapes (e.g. Dincauze 1976:64-65 and Plate 9B). Very similar forms are reported from multi-component sites containing Broad Point occupations in Ontario such as Surma (Emerson and Noble 1966: Plate IV, #18-21) and Brodie (Figure 4.22g-i). Thus, it is possible such tools were also part of the Broad Point tool kit in Ontario.

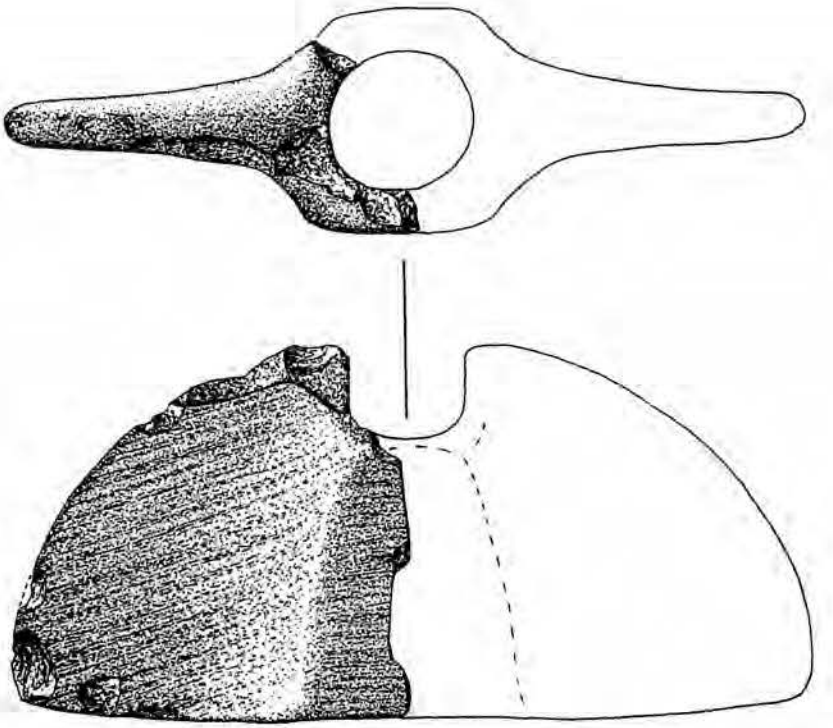

FIGURE 4.23: Possible Broad Point-Associated Faceted-Spine Bannerstone, Adder Orchard Site (Actual Size).

The remainder of the Ontario Broad Point tool kit is not very distinctive or elaborate. Excavations at the Davidson site (I. Kenyon 1978a, 1979a) yielded chipped stone end scrapers, drills and bipolar pieces, as well as chopper-like tools made from metamorphic and igneous rocks. Also found at Davidson were hammerstones, a whetstone, a possible netsinker and a portion of a ground slate tool. In general, ground stone tools do not seem common on Ontario Broad Point sites. Along the Atlantic coast bannerstones occur on Broad Point sites and Dincauze (1972) has identified the faceted-spine, winged bannerstone as an element of her Atlantic phase. In Ontario, similar faceted-spine bannerstones have been recovered as surface finds (Figure 4.23), but they can not be yet confidently associated with Broad Point material.

"Satchell" Complex

"Satchell" is a term sometimes used to denote the complex of stemmed and lanceolate bifaces primarily made from coarse-grained lithics such as greywacke. First defined for Michigan (Peske 1963; Fitting 1970), similar artifacts have been identified in northwestern Ohio (Cufr 1973; Payne 1982b) and Ontario (Chillingworth 1965; I. Kenyon 1980b). A number of archaeologists see similarities between these stemmed and lanceolate forms and such Late Paleo-Indian point types as Scottsbluff (e.g. Fitting 1970; Mason 1981) and thus identify Satchell as Paleo-Indian. Roosa (1966), however, suggested that the Michigan material was Late Archaic, and more recent evidence supports this Late Archaic placement. In Ontario sites such as Davidson and Sadler (I. Kenyon 1980b), which contain greywacke "Satchell" points, are situated on sand deposits created by post-glacial Lake Nipissing in the Huron basin, and hence, can be no older than ca. 4500 B.P. (Figure 4.1). Radiocarbon dates from Ontario (Table 4.2), Michigan (Simons 1972, 1979) and Ohio (Stothers 1983b) indicate a date sometime between ca. 4000 and 3000 B.P.

As previously discussed, the use of stemmed points, such as those found in the "Satchell" complex, are part of the widespread Late Archaic use of broad points. The manufacture of bifaces from coarse-grained rocks, rather than being a distinctive Satchell trait, is a phenomenon found in areas where suitable chert sources were not easily available (e.g. eastern Ontario, Pennsylvania). Thus, "Satchell" as a cultural taxon is a term that should be either discontinued or used expressly to refer to a regional variant of Broad Point.

Subsistence-Settlement Systems

Little is directly known about Broad Point settlement and subsistence patterns in Ontario. At the Davidson site on the Ausable River (I. Kenyon 1978a, 1979a), excavations yielded a small sample of poorly preserved deer and turtle bone. This sample is biased in favour of larger fauna, since animal species with thin-walled bone such as fish are not likely to be well preserved except under ideal soil conditions. As well, a set of maxillary and mandibular teeth indicated the presence of a dog burial. The limited floral sample includes walnut shell and a possible acorn cotyledon; the carbonized wood assemblage is dominated by oak. Similar scanty remains have been found on Michigan "Satchell" sites (I. Kenyon and Payne 1981), with walnut, butternut and hickory nuts occurring at the Pinegrove Cemetery site. Oak charcoal was identified at the Pinegrove Cemetery as well as at the Plank Road site in southeastern Michigan, where deer bone was also found.

Distributional information leaves the impression that Broad Point sites tend to be associated with areas of rolling or varied topography. Major sites are often located along major river systems such as the Ausable and Thames in southwestern Ontario and the Trent and Rideau in eastern Ontario. In southwestern Ontario, such sites are often within easy access of sand plains which once supported oak-hickory forests (I. Kenyon and Payne 1981). Similarly, A. Roberts' (1985) study of southcentral Ontario indicates that Broad Point sites, when compared to those of preceding Archaic complexes, tend to be situated on larger water courses, closer to water sources, and on sand plains or moraines. In southeastern Michigan and northwestern Ohio, Satchell sites are strongly associated with upland oak forest zones (Payne 1982b; I. Kenyon and Payne 1981).

When this distributional evidence is combined with the excavated faunal and floral material, there is a strong suggestion that Broad Point sites in Ontario represent a culture focussed on upland resources, especially mast forests, which would have been rich in game animals such as deer. Hence, the curiously large points may thus be the most archaeologically visible element in a specialized hunting technology, possibly the use of thrusting spears in combination with deer drives. This upland orientation stands in contrast with the lakeshore emphasis seen in the succeeding Small Point Archaic.

There is, however, another interpretation of this evidence. As already discussed, some archaeologists regard "broad points" not as projectile tips but rather, as specialized knives. According to this view, the upland orientation of Broad Point sites may represent functionally (and perhaps seasonally) specific processing camps. Thus, the Broad Point complex may not be a distinctive archaeological "culture" but rather, a tool kit that is an element in some other complex such as the Small Point Archaic (discussed below). Against this interpretation may be registered certain observations. Throughout the Northeast Broad Point sites tend to be found as "pure" components and with similar radiocarbon dates. Also, despite the upland and riverine emphasis, in Ontario Broad Point sites may be found both in interior locales as well as lakeshore environs (e.g. Surma, Selkirk; Figure 4.18).

Burial Patterns

Nothing is known of Broad Point burial practices in Ontario but some inferences can be made from the scanty evidence for New York State. Along the Mid-Atlantic coast Broad Point-using peoples buried their dead in massed cremations, often with a rich accompaniment of grave goods including caches of points, preforms and ground stone tools (e.g. Dincauze 1968; Regensberg 1971). A cache of Perkiomen points associated with a cremation at the Piffard site in western New York (W. Ritchie 1969:153-155) suggests that the cremation-caching burial mode may extend into the Great Lakes area. There is as yet no evidence indicating that similar Broad Point caches occur in Ontario.

Other, less elaborate, Broad Point burial modes may be represented at the Frontenac Lake site in central New York State (W. Ritchie 1945, 1969:104-125). While this site, a tiny island covered with human burials, has been identified as a distinctive archaeological phase or culture, Frontenac Island can also be viewed as a "customary" mortuary locale used by a number of successive Archaic complexes including Brewerton, Lamoka (Narrow Point) and Broad Point. A spread of over a thousand years in the carbon dates from this site (ca. 4900-3700 B.P.) is consistent with such an interpretation. Some burials at Frontenac Island contain "classic" Genesee points, although none is associated with large lithic caches. One burial (#139) contains a Genesee point with a short, slightly contracting stem very similar to an Ontario variant common in the Niagara Peninsula area (e.g. Figure 4.20d). The Frontenac burial was an "in-flesh" extended inhumation associated with two points, a mass of duck bone and a possible human cremation by the shoulder. Nearby lay a similar extended burial with two broad points and a beaver incisor tool. If Ontario Broad Point burials resemble those of Frontenac Island, then few traces would remain in soil environments that were not conducive to the preservation of bone.

Small Point (Terminal) Archaic

Introduction

If by 4000-3500 B.P. many local archaeological sequences in northeastern North America are characterized by large, sometimes massive, points of diverse forms, the 3500-3000 B.P. period displays a distinct trend towards smaller, narrower points. For example, in the Susquehanna tradition of the mid-Atlantic coast there is a projectile point developmental sequence starting with broad-bladed Snook Kill and Perkiomen points of ca. 3700-3500 B.P., then the slightly narrower Susquehanna Broad points and finally, the slender fishtail-shaped Orient points of ca. 3000 B.P. (e.g. Funk 1976; Kinsey 1972). In western Illinois, the ca. 4000 B.P. Titterington phase with its broad-bladed points is succeeded by the Labras Lake phase of ca. 3000 B.P., which has strikingly smaller points (McElrath et al. 1984). In Wisconsin, too, the wide-bladed side-notched points of ca. 4000-3500 B.P. are followed by the short, stemmed Durst points of 3000 B.P. (Stoltman 1986).

A similar Late Archaic trend towards smaller points also occurred in parts of southern Ontario. A shift to smaller points would seem to be more than merely a stylistic phenomenon; it implies a significant modification in weapons technology (introduction of bow and arrow?) and, perhaps, hunting techniques. There are other cultural changes during the terminal Archaic. As further discussed below, the Ontario Small Point Archaic settlement patterns differ from those of Broad Point, the former complex having a stronger lakeshore orientation and more indications of a broad-spectrum economy. Furthermore, there is good evidence for the elaboration of burial practices during Small Point times. In particular, a number of isolated burials or cemeteries assigned to either the Haldimand or Glacial Kame complexes dated to the ca. 3000 B.P. period are apparently contemporary with some of the domestic or occupational sites assigned to the Small Point Archaic. In the following, data from domestic sites are discussed first, prior to examining these mortuary complexes in detail.

Distribution in Ontario

The spatial distribution of the Small Point Archaic in Ontario is not well-documented. The key projectile point types have an "anonymous" appearance (Figure 4.18) and hence do not "jump out" in mixed surface collections as do broad point forms. Many Ontario collections have been "typed" using W. Ritchie's (1971b) projectile point typology for New York State, in which there are no close analogues for the various small point varieties further described below and whose affinities seem to lie more with the central Great Lakes and the American Mid-west. Recognition of notched and stemmed points of the terminal Archaic in Ontario is made difficult by the fact they tend to have attributes that overlap those of certain Middle Archaic and Middle Woodland forms. This has suggested to some archaeologists (e.g. J. Wright 1972d) that these similarities reflect an underlying historical continuity. As well, the remainder of the Small Point tool kit is rather nondescript.

Despite difficulties in the field recognition of many sites, a number of Small Point habitation components have been excavated, some producing abundant faunal material. Excavated sites are confined to southwestern

Ontario (Figure 4.17), where small points would seem to be common in surface collections, especially in lakeshore and marshland environments (e.g. I. Kenyon 1988). A significant series of excavated sites occurs on the Huron shore in the Canadian forest zone. These include several locales at Inverhuron (W. Kenyon 1959; P. Ramsden 1976) and the nearby stratified Knechtel I site (J. Wright 1972d). All of these sites have good faunal preservation. To the south in the Carolinian zone, Crawford Knoll near Lake St. Clair (I. Kenyon 1980c) has also produced a large faunal collection. In the interior of the Carolinian zone, the Innes site (Lennox 1986a), while lacking preserved faunal material, has been extensively excavated, and a smaller excavation has been conducted on the multi-component Welke-Tonkonoh site (Muller 1988, 1989), another interior camp.

Artifact Assemblages

Projectile Point Varieties

A diverse group of points is found in the terminal Archaic of Ontario (Figures 4.18 and 4.24); there is considerable range in size and hafting element mode. At least four major point varieties occur: Crawford Knoll, Innes, Hind and Ace-of-Spades. These varieties intergrade in their characteristics and perhaps they could best be regarded not as discrete types but as a convenient segmentation of a continuum (I. Kenyon 1989). The precise relationship among these varieties is uncertain, although the present evidence, further discussed below, suggests that the smaller types, such as Crawford Knoll and Innes, date slightly earlier than the larger Hind and Ace-of-Spades forms.

Crawford Knoll Points

Crawford Knoll points (Figure 4.24i-m) are tiny side- and corner-notched points, best represented in Ontario at the Crawford Knoll site near the Lake St. Clair Delta (Figure 4.17; I. Kenyon 1980c), which has a radiocarbon date of 3480 B.P. Virtually identical points are found in the Haldimand complex burials at the Bruce Boyd site (Spence and Fox 1986; and below). Small notched points similar but not identical to those of Crawford Knoll appear in the lower levels of the Knechtel I site (J. Wright 1972d). The lower levels (III to V) at Knechtel have radiocarbon dates of 3040, 3250 and 3690 B.P. (Table 4.2), although the last date may be somewhat too old for this complex. Small notched points also have been found in the terminal Archaic stratum of the Weber I site in Michigan (Lovis and Robertson 1989), radiocarbon dated to 2910, 2990 and 2990 B.P. Further afield, there are also strong similarities between Crawford Knoll points and those of the Riverton Culture of the Wabash valley in eastern Illinois, especially the Merom expanding stem and Trimble side-notched types (Winters 1969). The Riverton Culture is well carbon dated between 3490 and 3110 B.P. Based on this scattered evidence, the possible date range for Crawford Knoll points in Ontario is ca. 3300-2900 B.P.

Hind Points

Similar in shape to Crawford Knolls, Hind points are notably larger (Figure 4.18). Some examples are extremely well-knapped, and may represent special mortuary items. This type is defined from grave good lots at the Hind site, a Glacial Kame mortuary complex on the Thames River (Spence and Fox 1986; and below). Hind has received a conflicting series of carbon dates; those that seem most applicable are determinations of 2875 and 2920 B.P. (Table 4.2). Similar notched forms are found at the undated Welke-Tonkonoh habitation site (Muller 1988, 1989), also in the Thames drainage. Stemmed and notched points, possibly related to those of Hind, are represented at a number of locales in the Inverhuron area, including W. Kenyon's (1959) Area "R" site and the nearby Rocky Ridge site (P. Ramsden 1976). The lowest level at Rocky Ridge has a radiocarbon determination of 3100 B.P., but all points derive from higher levels and so presumably date later than this. P. Ramsden (1976:44) suggests the final occupation at Rocky Ridge occurs about 2900-2600 B.P.

Points resembling Hinds are found in Michigan and Ohio, where they are sometimes called Feeheley points (Stothers and Abel n.d.). In northwestern Ohio, Hind-like points are included among the grave lots at the Williams cemetery site on the Maumee River, which has a long series of radiocarbon dates ranging from 3075 to 2330 B.P. (Stothers and Abel n.d.). A related assemblage including Hind-like points is dated to 2730 B.P. at the Hoffaker site

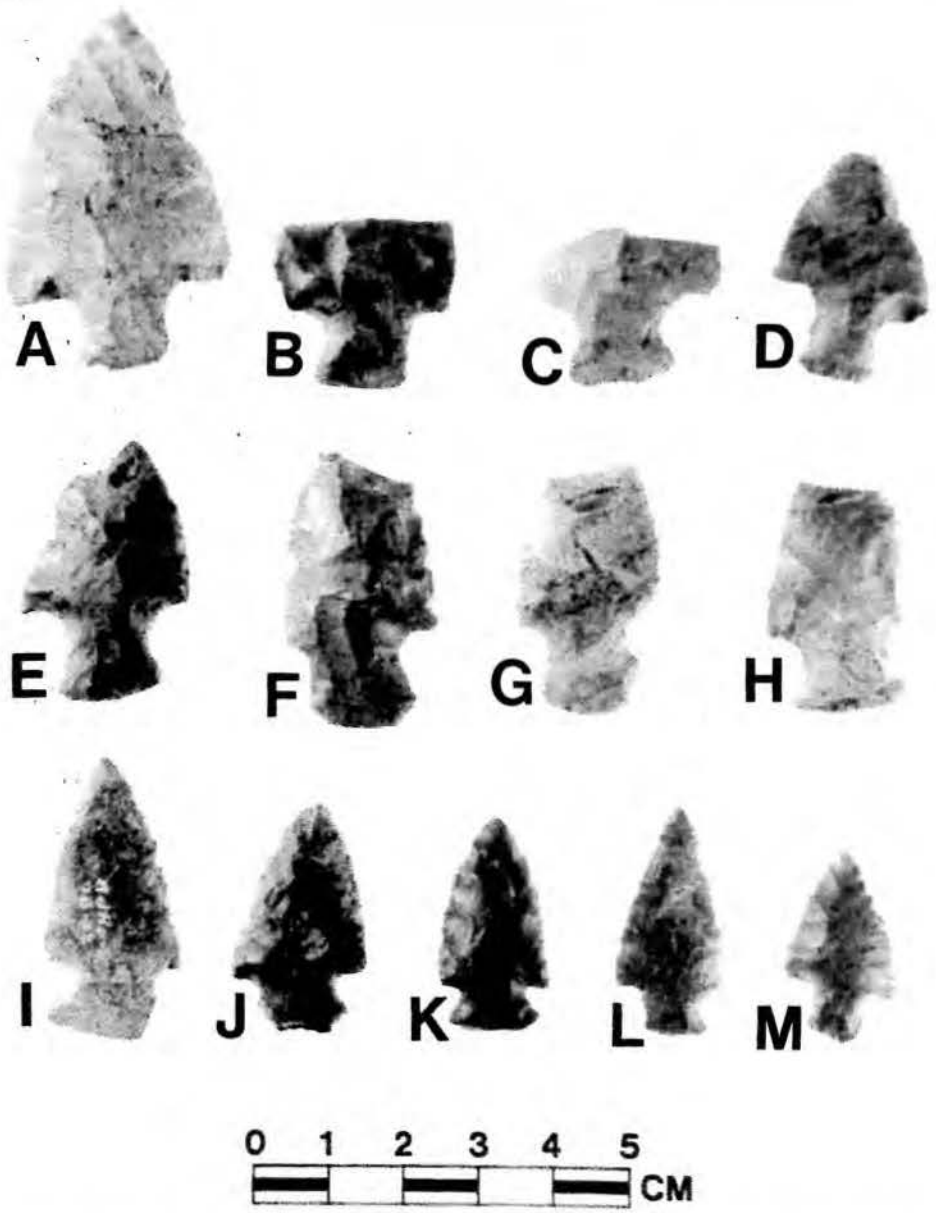

FIGURE 4.24: Small Points From Southwestern Ontario. A-D: Ace-of-Spades-like Points, North Cluster, Innes Site; E-H: Innes Points, South Cluster, Innes Site; I-M: Crawford Knoll points, Crawford Knoll Site.

in Ohio (Seeman 1986). In southwestern Michigan, the Wymer and Eidson sites yield points reminiscent of Hind, and are associated with radiocarbon dates ranging from approximately 2900 to 2500 B.P. (Garland 1986). Together, this information indicates a date for Hind points of roughly 2900-2700 B.P.

Innes and Ace-of-Spades Points

Innes and Ace-of-Spades points have expanding stems, but differ in that the former has a narrow blade and the latter a broader one (Figure 4.24a-h). Both varieties have been found at the Innes site near Brantford (Lennox 1986a). At Innes are two artifact clusters, the north locus being associated with the narrower Innes point form, and the south one with the broader Ace-of-Spades variant. The north cluster has a feature dated to 3350 ± 195 B.P.; the south one has a date of 2620 ± 80 B.P. Lennox suggests the entire site is single component and prefers the 3350 date for both loci; however, it is possible that both are dates are "good" and the two loci represent temporally discrete occupations. Elsewhere in Ontario, some Innes-like points occur at W. Kenyon's (1959) Inverhuron sites "R" and "M"; site "M" has a date of 2900 B.P. (Table 2). Crawford Knoll has yielded a single Ace-of-Spades point (I. Kenyon 1980c).

Innes points are remarkably similar to the Durst stemmed points of Wisconsin (Wittry 1959), which have four carbon dates ranging from 3040 to 1840 B.P. (Stoltman 1986). Points resembling Ace-of-Spades and Innes forms are found in Michigan, where they are assigned to the Late Archaic (Lovis and Robertson 1989). In the Riverton Culture of Illinois, Robeson Constricted stem, an Ace-of Spades form, is a minor type associated with the more classic small points (Winters 1969). Given the co-occurrence of small points with these larger forms, it is possible that Ace-of-Spades bifaces may be knives. At present, the precise dates and relationships of the Innes and Ace-of-Spade forms in Ontario are uncertain.

Other Lithic Tools

As noted above, most Small Point domestic artifact forms are not highly distinctive. Indeed, the most common stone tool form is probably the simple, amorphous, used flake, briefly employed for a variety of cutting and scraping tasks and then discarded. Moreover, even tools with more formal shapes are not diagnostic in the sense that they can occur in a number of prehistoric complexes other than Small Point Archaic.

Among tool forms made on fine-grained materials, such as cherts, are bifacially flaked items which undoubtedly represent preforms for points. Those in the final stages of manufacture tend to have a trianguloid outline similar to that of the finished points (Figure 4.25a-d). These trianguloid preforms are often termed "cache blades" because in the subsequent Early Woodland they may occur in caches, particularly in mortuary contexts (see Spence et al.: this volume). Other biface tools include: single shouldered knives (Figure 4.25i; see also Spence and Fox 1986: Figure 1.4); the odd side- or corner-notched bifacial end scraper (Deller and Ellis 1982: Fig. 11f) or perforator (P. Ramsden 1976: Fig. 18a) made by recycling points; and large "drills" with expanding or "t-shaped" bases (Lennox 1986a:232-233; Spence and Fox 1986: Figure 1.5). The drill form, as well as the recycling of points into end scrapers and other tools, continues into the succeeding Early Woodland (Spence et al.: this volume), although present data suggests recycling behaviour is not as common during Small Point times.

Another bifacial form is the *pièce esquillée* or literally, "scaled piece" (Figure 4.25g). These are small artifact forms with squarish to circular outlines which exhibit extensive battering on at least two opposing edges or ends ("bipolar battering"). Such artifacts are reported from several sites and often, for as yet unknown reasons, are made on Kettle Point chert (e.g. I. Kenyon 1980c:8; Lennox 1986a:227; Muller 1988:23; P. Ramsden 1976:31; J. Wright 1972d:9). Some interpret these items to be bipolar cores (Lennox 1986a:227), used when there are shortages of stone raw materials. It is argued that in order to produce flakes for tools from small exhausted cores, it is easier to rest one end of the core on a stone anvil and batter the other end with a stone "hammer". Contact at one end with the anvil and at the other with the hammer produces bipolar battering. Others, however, argue that these artifacts are "wedges". In this scenario, the battering at one end could result from contact with the bone or wood item being split while that at the opposite end was from being struck with a "hammer". Alternatively, battering on several edges could occur from constantly rotating the wedge during use.

A common unifacial tool is a small end scraper with a triangular to fan-shaped to thumbnail outline (Figure 4.25e). Frequently, the end opposite the scraping edge is thinned and the side edges are tapered. These modifica-

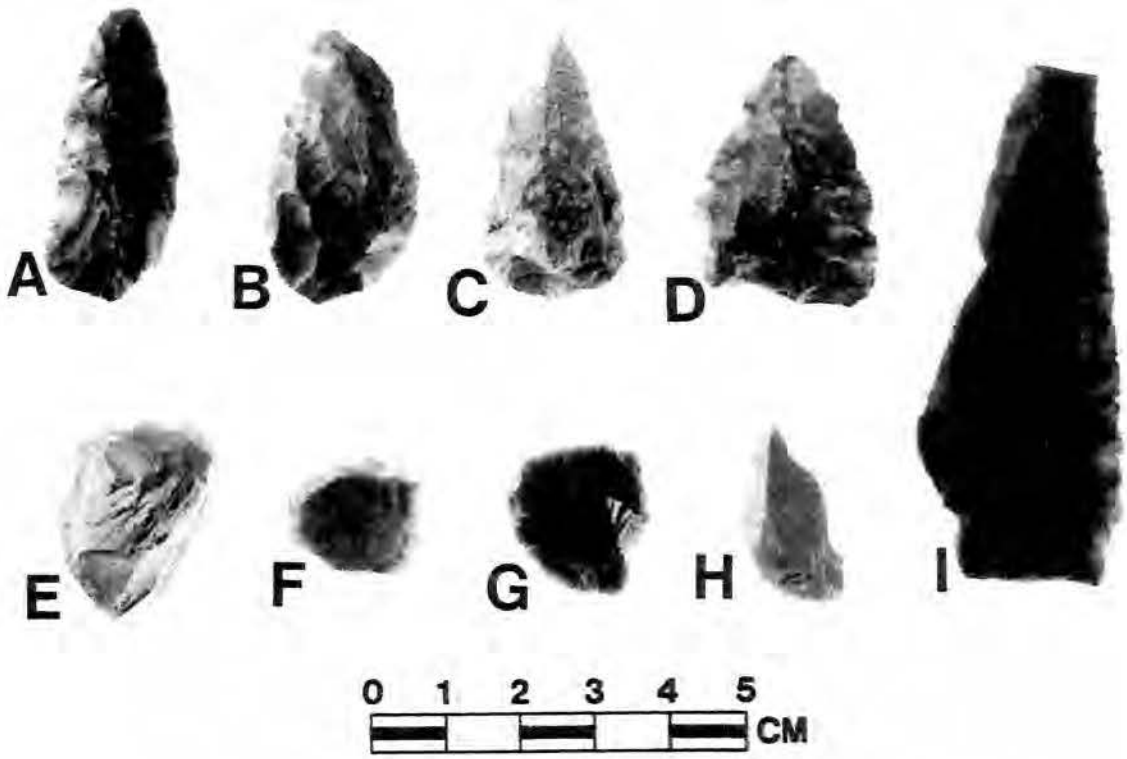

FIGURE 4.25: Small Point-Associated Tools. A-D: Trianguloid Preforms; E: Trianguloid End Scraper; F: Circular Scraper; G: Bipolar Artifact; H: Denticulate; I: Shouldered Siltstone Biface Knife.

tions would have facilitated hafting. Another scraper form was apparently unhafted and is reported from sites such as Welke-Tonkonoh (Muller 1988:25-26, 1989) and Thedford II (Deller and Ellis 1982:56-57). These items have a flaked, beveled, scraping edge around the entire circumference of the tool (Figure 4.25f), resulting in a circular to semi-circular outline shape. Other tools include flakes with serrated or denticulated edges which would serve admirably in shredding and sawing tasks (Figure 4.25h) and forms with roughly flaked concave edges or notches probably used as spokeshaves or drawshaves (Deller and Ellis 1982:57; Lennox 1986a:229). Also reported are tools with relatively small bifacially or unifacially retouched pointed projections, variously termed gravers, perforators, micro-perforators, piercers or drills in the literature (see Lennox 1986a:229-230; Lovis 1989:60; Winters 1969: Plates 21 to 23).

Tools on coarse-grained rocks such as sandstones, quartzites and meta-sediments also occur. Most forms exhibit minimal modification other than that produced by use. These include hammerstones for flaking stone, flat stones battered through use as anvils, notched pebble net-sinkers and what are usually referred to as cobble spalls or "bust-offs". The last-named are so far reported only from sites in the Inverhuron area, and include large, roughly circular, flakes knocked off the outside or surface of a cobble. These tools were apparently used as knives or possibly scrapers (W. Kenyon 1959: Plate 3; P. Ramsden 1976:19; J. Wright 1972d:21). More formalized tools on coarse-grained rocks also occur, notably large choppers with bifacially flaked working edges. Sometimes flaking is

confined to the edges of the tool (e.g. P. Ramsden 1976: Figure 12a; J. Wright 1972d: Plate II-9), while in other cases the tool surfaces have been completely altered by bifacial flaking (Muller 1988:22-23, 1989).

Ground stone artifacts are exceedingly rare on Small Point Archaic domestic sites and are restricted largely to celts (e.g. W. Kenyon 1959: Plate V-7). However, on later-dating occupation sites, one occasionally recovers fragmentary examples of other ground stone forms, particularly "birdstones" (e.g. Muller 1988: Figure 21-40, 1989) and "gorgets" (e.g. Deller and Ellis 1982: Figure 11h). These two artifact forms, usually manufactured from slate, are much more common on mortuary sites (see below). They also occur, although in slightly different styles, on succeeding Early Woodland sites. Birdstones are small, expertly made effigies with a flat bottom (Figure 4.28h). They have holes drilled diagonally from each end through to the base. Gorgets are thin, tablet-like items with variable outline shapes which are distinguished solely by the presence of two or three holes drilled through their centres (Figure 4.28i). While it is possible that at least the birdstones could have served as atlatl weights, it is just as likely that both these forms served largely in ceremonial contexts.

Bone Artifacts

Owing to excellent preservation conditions, Rocky Ridge, Knechtel I and Crawford Knoll all have collections of bone artifacts, unlike most Ontario Archaic sites. Characteristic of all three sites are bipointed implements about 5 cm in length (Figure 4.26), which have variously been called "bone barbs", "gorges" or "composite tool barbs". While the precise function of these tools is uncertain, they likely represent fishing gear. Possibly they were elements of composite fish hooks, similar to those made of hawthorns found by W. Ritchie (1969:278-279) at the Late Woodland Castle Creek site in New York. W. Ritchie (1969) interpreted the Castle Creek specimens, which still had preserved cordage, as a trot-line to which were attached almost two dozen dropper lines. Unlike certain other Archaic complexes such as Lamoka, no single piece bone fish hooks have been found on the Ontario sites; however, copper fish hooks occur at Inverhuron and Knechtel.

Other hunting or fishing gear represented on Small Point sites are notched bone projectile points, conical antler projectile points, barbed harpoons or points, and antler shaft straighteners. The remainder of the bone tool assemblage is not elaborate, with awls and modified rodent incisors being well represented. Ornaments include tubular bone beads and drilled mammal canine pendants.

In general, the bone assemblage on the Ontario Small Point sites is broadly similar to those found in many Middle and Late Archaic (and even Woodland) complexes throughout eastern North America, and thus can be considered as representing a generalized pan-Archaic bone-working technology.

Settlement-Subsistence Patterns

Lakeshore Settlements

Rocky Ridge (P. Ramsden 1976) and Knechtel I (J. Wright 1972d) are located on the Lake Huron shoreline (Figure 4.17) in areas of sand dunes and fossil beach lines created sometime after the Lake Nipissing high water period of ca. 4500 B.P. Similar sequences of faunal exploitation are evident at both these stratified sites. In the lowest levels, fish bone dominates, and a variety of species is present, including sturgeon, trout, pike, bass family, walleye, sucker, catfish and drum. This aquatic orientation is also reflected by the presence of duck, turtle and beaver.

While deer bone occurs in the lower levels at these sites, in the upper strata it greatly increases in quantity at the expense of fish, although at Rocky Ridge this transition appears to occur later in time. Several explanations can be offered for this shift from fish to deer. One possibility is that in the chemically more active upper zones of the sites soil acidity has resulted in differential preservation, with thick cortex material such as deer being less subject to disintegration than the thinner fish bone. However, the explanation preferred by the site investigators (J. Wright 1972d; P. Ramsden 1976) is that the immediate environs of the sites changed during the hundreds of years in which

FIGURE 4.26: Bone Barbs From Crawford Knoll Site. Shown at actual size.

they were occupied. In the 3500-3000 B.P. period, the water level of the Huron basin, which had reached a high point in Nipissing times (4500 B.P.), was falling. With dropping lake levels, the local environment would have changed from one that favoured aquatic animals to one that was drier, providing a more suitable habitat for deer (Savage 1971). For both Rocky Ridge and Knechtel I, a spring through fall occupation is suggested, with some possibility that the lower levels at Rocky Ridge represent camps of shorter duration (P. Ramsden 1976).

In the Carolinian Biotic Zone, the Crawford Knoll site (I. Kenyon 1980c) is located in the Lake St. Clair delta area, adjacent to the Chenal Ecarte, the easternmost channel of the delta. Based on 19th century land survey records, the immediate environment of the site would have been a rich mosaic of open water, marsh, grassland and forest. Thus, not only would aquatic animals have been abundant, but also deer, which would have thrived in the forest edge of the site environs. The well-preserved faunal assemblage at Crawford Knoll contains a high percentage of deer, similar to the upper levels of Rocky Ridge and Knechtel I. There is nonetheless a diverse representation of aquatic animals including muskrat, turtle and fish, particularly bowfin and drum. Floral remains are sparse, consisting of some walnut shell. A spring through fall occupation is indicated.

A range of feature types have been identified at the various Inverhuron locales, Knechtel I and Crawford Knoll. A prominent feature type consists of ca. 1 metre diameter pits, relatively shallow and flat-bottomed, which are likely storage or trash pits. Shallow fire-cracked rock features, sometimes circular hearths or more extensive "fire-beds", are notable at Knechtel I and Rocky Ridge. W. Kenyon's (1959) Inverhuron sites "M" and "R" produced massive, deep, rock-lined features that may be roasting pits. All sites have an abundance of fire-cracked rock.

None of the lakeshore/marshland components are very large, suggesting that site populations were limited to those of microband size. The Inverhuron and Lake St. Clair delta areas, however, are associated with a number of other sites similar to those that have been excavated. It is unknown whether in each area these other components represent camps of the same microband, occupied at different times, or multiple small bands who lived in these resource nodes contemporaneously.

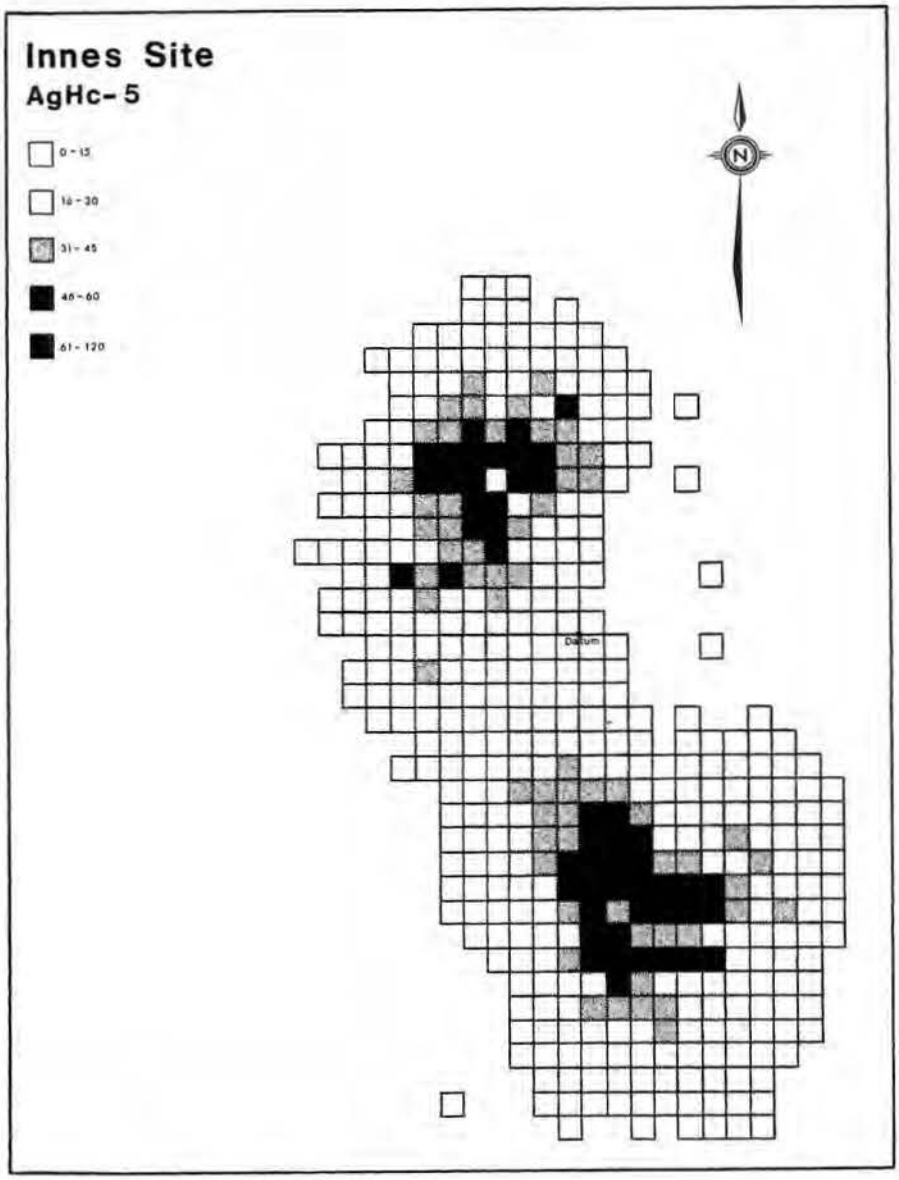

FIGURE 4.27: Map of Innes Site Excavation Showing Location of the Two Site Clusters as Revealed by Densities of Waste Flakes. Reproduced with permission of the Kent State University Press from Lennox (1986a).

Interior Camps

The best studied interior camp is Innes (Lennox 1986a), located 7 km from the Grand River near Brantford (Figure 4.17). Innes is typical of many Archaic components in southern Ontario in that it has long been under cultivation so the bulk of the artifacts were recovered from disturbed plowzone deposits. Careful screening of the plowzone from 446 one-metre squares revealed two oval clusters of artifacts, each measuring about 15 by 10 metres in size (Figure 4.27). Towards the southern end, each locus contained a hearth-like feature in the subsoil. The excavator suggests that the two loci may represent oval house structures.

As is typical of most "upland" sites, no faunal remains were preserved at Innes. Floral material included walnut shell, elderberry, raspberry and cherry. The immediate environment of the site largely consisted of a lowland black ash swamp and oak-dominated upland forest. Such an environment would have been excellent for deer hunting either in the fall, when oak forests were fruiting, or in the winter, where the swamp and rolling terrain would have afforded some protection for deer. Lennox (1986a) suggests that Innes was a cold weather base camp (fall and/or winter) with each locus representing an extended family group.

The Welke-Tonkonoh site west of London has an environmental setting much like Innes. Within several kilometres of the site would have been maple-beech, oak-hickory and lowland (black ash, tamarack) forest units. No faunal or floral material is reported for Welke-Tonkonoh, but its setting and artifact inventory (Muller 1988:49, 1989) suggest that it represents a site type similar to Innes.

Seasonal Patterns

The above described excavated components suggest there are at least two major domestic settlement types. The sites in lakeshore environments seem to have been occupied at anytime from spring through fall. While there are differences among and within these sites, faunal material indicates a diffuse or broad-spectrum pattern of exploitation. These sites are located in rich environmental zones, where resource scheduling would have permitted multi-season occupation. In the interior were either fall or winter camps which presumably focussed on deer hunting and possibly the collection of "bush fruit".

An approximately similar settlement-subsistence pattern has been proposed for the Late Archaic of the Saginaw valley of Michigan (Keene 1981; Lovis 1989). During the high water stage of Lake Nipissing times, a large bay would have occupied much of the Saginaw valley. According to Keene's (1981) reconstruction, bayside sites like Feeheley, with a high percentage of fish bone (similar to the lower levels at Knechtel I and Rocky Ridge), would have been inhabited in the spring. Summer sites like Schmidt, also on the edge of the bay, have a greater percentage of deer bone, but also evidence of broad-spectrum resource use. Fall would have been characterized by deer hunting and winter by the procurement of a variety of small animals. The Weber I site (Lovis 1989), inland from the embayment area, would seem to correspond to a fall hunting camp, with the faunal assemblage being dominated by deer and elk.

This reconstruction for the Late Archaic of Michigan differs slightly from what has been suggested for Ontario. According to Keene's (1981) Saginaw model, the lower components at Rocky Ridge and Knechtel I would correspond to a spring pattern, the upper levels to a summer one. Keene's (1981) model, however, does not take into account the possible effects of lake level change, as has been used to explain faunal variation at the Rocky Ridge and Knechtel sites. There is evidence (Lovis and Robertson 1989) that some of the Saginaw Archaic sites may not date to ca. 4000 B.P., as has often been assumed, but may be closer in time to the Small Point sites of Ontario (ca. 3000 B.P.) and, hence, occupied during a period when Lake Huron was falling to its modern level. If so, then variations among the Michigan sites simply may reflect changes in their immediate environment rather than a fixed seasonal cycle [Lovis (1986) has been developing a model for the Saginaw Archaic that explicitly recognizes lake level variation].

Despite variations in the relative frequencies of fish bone on the Saginaw and Ontario components, most sites have similar compositions of fish species, being dominated by bowfin, drum and catfish/bullhead. These fish can be easily taken in shallow waters spring through fall. Less abundant at Crawford Knoll and Rocky Ridge are species like sucker and walleye, which can be most effectively acquired during their early spring spawning runs up rivers and streams. In contrast with the Archaic sites, on presumed spring encampments of the Middle Woodland Saugeen culture (Spence et al.: this volume), bones of sucker and walleye are prominent in fish bone assemblages (e.g. Finlayson 1977; I. Kenyon and Fox 1983). There is the possibility, then, that none of the excavated Late Archaic components represent early spring sites, which may lie yet unidentified along some of the major river courses such as the Saugeen, Thames, Grand and Ausable.

A riverine aspect of the Terminal Archaic seasonal round is further suggested by the location of mortuary components, described in greater detail below. Glacial Kame burial sites are often located near areas with rich resources, particularly major rivers. For example, on the Thames River the Hind site is at the centre of a huge oxbow bend, while the Blackfriar's Bridge site is near the forks of the Thames at London (see Figure 4.17). That is, these burial sites are often located near excellent spots for river fishing, which could include harvesting of early spring spawners like sucker and walleye. For the Middle Woodland Saugeen culture, it has been proposed (J.V.Wright 1963; Finlayson 1977) that the period of maximal population aggregation was in the spring, when families dispersed for much of the year gathered together to exploit spawning fish. Donaldson, the representative habitation of this seasonal pattern, also has associated cemeteries, possibly reflecting group ritual during periods of population aggregation. This seasonal pattern perhaps extends back into the Late Archaic: certain Glacial Kame sites may be located near macroband camps established at important spring fishing places. In northwestern Ohio, a similar locational pattern seems to exist: the massive Late Archaic cemetery at the Williams site is situated at the first rapids of the Maumee River, an excellent place for spring fishing (Stothers and Abel n.d.)

Burial Patterns

Haldimand Complex

Four features at the Bruce Boyd site (Spence et al. 1978), called the Haldimand complex (Spence and Fox 1986:8), represent our only evidence for early Small Point burial practices. Projectile points included in the features as grave offerings are of the Crawford Knoll type (Spence and Fox 1986: Figure 1.4n-r). Three of the features are definite burials, accompanied by red ochre, copper beads, a copper awl, a copper celt, a copper clasp bracelet, iron pyrites for fire-making kits, beaver incisors and a number of small chert bifacial preforms and points. One pit with red ochre and chert bifaces may be a ritual cache, though poor bone preservation and some evidence of disturbance leave open the possibility that it too had been a burial. There are no indications of an associated habitation area, so these features may well represent the earliest true cemetery in the province.

Glacial Kame Complex

Glacial Kame (ca. 3000 to 2800 B.P.) is a mortuary complex apparently associated with the latest terminal Archaic occupation of southern Ontario. It has been difficult to link the exotic artifacts in the discrete cemeteries of Glacial Kame to the more prosaic tool assemblages of habitation sites, and hence, to the day to day lives of these people. Yet, the identification of the distinctive Hind corner-notched projectile point/knife at the Hind site (Spence and Fox 1986:8) and other mortuary sites, as well as on some occupation sites noted earlier, has begun to help overcome this problem.

The mortuary components are recognizable through a variety of exotic items used as grave goods. Diagnostic of Glacial Kame (see Figure 4.28), at least in southern Ontario, are a series of large gorgets with "sandle-sole" or circular outlines made on marine shell from the east coast; deposits of a greenish clay (W. Ritchie 1949a:24-45); Hind points; paired copper adzes with slightly hollowed, gouge-like bits; bar birdstones without protuberant eyes; bear maxilla masks; "Cloudblower" tubular stone pipes; and constricted centre gorgets (Spence and Fox 1986; Cunningham 1948; Converse 1980). Also commonly present in Glacial Kame cemeteries, but found too in components of other complexes, are discoidal shell beads, cubes of galena, copper nugget beads, copper awls, long t-shaped bifacial drills, red ochre and a variety of other items. Some of the more informative sites are described briefly below. Data on still other components are presented elsewhere (Spence and Fox 1986:12-14; Lee 1952; Williamson 1978b:106-109, 1980a; Wintemberg 1928a; W. Ritchie 1949a:42-43, 1955:72-73).

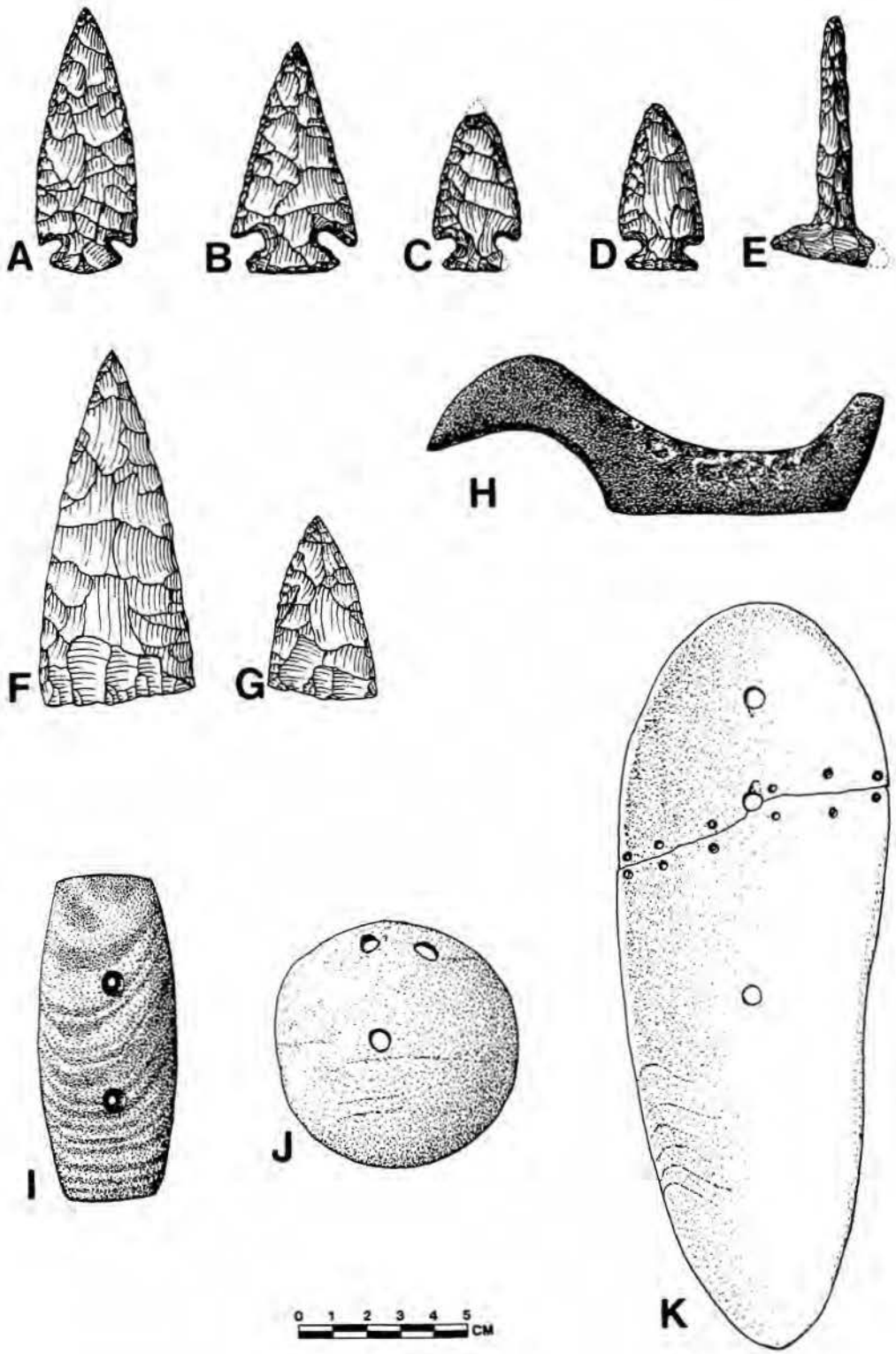
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FIGURE 4.28: Glacial Kame Complex Artifacts. A-D: Hind Points; E: T-Based Drill; F-G: Cache Blades; H: Eyeless, Bar Type Birdstone; I: Banded Slate Gorget; J: Circular Marine Shell Gorget; K: "Sandle-Sole" Marine Shell Gorget (Note breakage and repair holes; redrawn after Wintemberg 1928a). A-G, I: Hind Site; H, J: Schweitzer Site; K: Picton Site.

Sites

Located on a sandy knoll near Wardsville (Figure 4.17), the Hind site was excavated by Stanley Wortner and William S. Donaldson (Wortner 1978) and the human skeletons analyzed by Susan Pfeiffer (1977:35-40, 1979; see also Savage 1976). Data are available for several graves but have not yet been published in detail. One grave is definitely Late Woodland while some others are of uncertain affiliation. Most, however, can be assigned to the Glacial Kame complex. Grave goods had been placed with several individuals, and some graves had also been treated with red ochre and deposits of green clay. Adult males have the majority of the grave goods, which include galena from a source in northeastern New York state (Farquhar and Fletcher 1984), a tubular stone "Cloudblower" pipe, four circular marine shell gorgets, two bear maxilla masks, two bar eyeless birdstones, copper and marine shell disk beads, copper awls, copper celts, Hind style points and other items.

Burial fifteen contained the remains of two individuals, the flexed primary interment of an adolescent about 14 years old of unknown sex and the cremated remains of an adult male of middle age. Red ochre occurred with both individuals. The adolescent had a scraper and two drills of chert; antler tines; an abrading stone; the tubular stone pipe; a beaver incisor; several freshwater mollusk shells; one of the bear maxilla masks; modified mandibles of marten, fisher and raccoon; a deer metapodial tool; copper beads; and some green clay. With the adult male were lumps of iron pyrites (probably a fire-making kit), a slate gorget, a circular marine shell gorget, and both birdstones (Spence and Fox 1986:12-13, Fig. 1.7). Radiocarbon dates of 4570, 2920 and 1790 B.P. were obtained from the cremated bone, while a date on the adolescent's bone is 2875 B.P. (Wilmeth 1978:124).

Half of the individuals were cremated, but there was no clear bias in this respect to any age or sex category (Pfeiffer 1977:35, 150-151). There is a tendency for cremated individuals to have few or no grave goods, but this does not seem to reflect a status distinction (Wortner 1978). As noted above, the cremated male of burial 15 was well supplied. Also, fire-damaged fragments of artifacts with some cremations suggest that their offerings may have been destroyed in the original cremation event, which took place elsewhere.

Although there are variations in the amount of grave goods deposited with individuals, there is no evidence to suggest hereditary rank distinctions in the Hind society. Any status differences were probably due to age, sex and achievement. Although males had the majority of the grave goods, some females still received trade goods like marine shell gorgets and copper beads. The only possible evidence for inherited status is the unexpectedly young age of the burial 15 individual with the ritually important items, the stone pipe, animal mandibles and bear mask. It could be argued that a 14 year old was too young to have earned the right to such items. However, osteological data indicate no close relationship between the adolescent and the adult male (burial 20) with the other bear mask (Spence 1986:88). If the possession of these masks does indeed reflect some special ritual status, it is apparently not one transmitted by virtue of close social (or at least genetic) relationship.

The cemetery was used repeatedly, to judge by the overlap of some graves (Wortner 1978). Probably the band held burial ceremonies once a year, burying those who had died over the preceding year as their annual round took them back to the area of the cemetery site. Those who were to be buried at that time were placed together in a single pit. This reconstruction allows us to make a rough estimate of band size (Spence 1986). When features with single burials and those with multiple burials are considered together, an average of 1.7 individuals per feature is indicated, suggesting a mean annual mortality rate of 1.7 people. If hunter-gatherers in temperate climates have a crude death rate of about 3.4% (cf. Buikstra 1976:25), a population of some 50 individuals is indicated for the Hind band.

Osteological comparisons among the individuals at Hind suggest they were physically rather heterogeneous. This result suggests a fairly high level of gene flow among bands, as would be expected of a small band society with a necessarily high rate of exogamy (Spence 1986). Neither males nor females show a great deal of internal physical homogeneity, so there was probably no particular post-marital residential preference. An individual of either sex, then, was more likely to marry somebody from outside his or her band, and the new couple could choose to affiliate with the band of either sets of parents. Band membership, in other words, was relatively open and probably somewhat fluid, a common condition with hunter-gatherer societies.

Another Glacial Kame site consists of two burials exposed in a sand bank near Port Franks (Figure 4.17; Coppieters 1976; Jury 1978). One was a cremation, the other a multiple interment with red ochre. The latter, which included the remains of at least two adults and one sub-adult, was well-furnished (Jury 1978). The grave goods included 3 Hind style points, a Meadowood-like (see Spence et al.: this volume) double-notched point or knife, a chert core, a point with broken base, 3 t-shaped chert drills, a chert bifacial knife(?), a circular marine shell gorget, 5 mollusk shells, 4 bear canines, an antler tine, 3 bone points, a bone tool fragment, 41 small galena cubes, a copper celt, 3 copper awls and 2 copper beads. The galena proved to be from the same source in northeastern New York state as the Hind site galena (Farquhar and Fletcher 1984).

The Picton site is yet another Glacial Kame cemetery, located on a sandy knoll near Picton in Prince Edward County (Figure 4.17; Wintemberg 1928a; Cunningham 1948:28, pl. V; W. Ritchie 1949a:24-45; Pfeiffer 1977:33-34). A total of 14 graves with 17 individuals have been excavated there over a number of years, the greater part of them by W. Ritchie (1949a). Others have undoubtedly been lost to erosion, agricultural activities and looters. Burial modes include multiple interment, cremation, flexed, bundle and extended variants. Grave goods from the site include, among other things, beads and sandal-sole and circular gorgets of marine shell, paired copper celts, copper beads and awls, galena, red ochre and plaques and nodules of green clay. The galena probably came from a source near the Ottawa River (Farquhar and Fletcher 1984). Faunal material with the burials includes muskrat, woodchuck, cottontail rabbit, northern pike, and a perforated fox mandible.

Though skeletal preservation was poor, it could be determined that both adults and sub-adults received offerings, and at least one female was well-supplied with a whelk shell container and a number of shell and copper beads. Cremation, in contrast to Hind, was biased strongly toward adults. Of 10 cremated individuals, 9 were adults and one was probably a sub-adult, the "younger individual" of a grave reported by Wintemberg (1928a:177). Uncremated individuals included two adults (one a late adolescent or young adult female; Pfeiffer 1977:33-34) and 5 sub-adults. Three of the 14 burial features at Picton contain two individuals, the rest only one (treating burial 1 as two separate interments; W. Ritchie 1949a:28). The average for the cemetery is 1.2 persons per grave, suggesting a band size of 35 individuals.

Interpretations

Hunter-gatherer bands participating in the Glacial Kame mortuary complex were distributed across the southern part of the province. They were linked through a widespread exchange network that brought marine shell artifacts from the Atlantic coast of the United States, copper goods from the Lake Superior region, and galena from sources in northeastern New York state, eastern Ontario, and the headwaters of the Mississippi. Most of these materials were used in mortuary rituals. Their separation from ordinary domestic activities has hindered the recognition of habitation sites, leaving us with a one-sided view of Glacial Kame.

The people responsible for the Glacial Kame mortuary complex in Ontario were probably organized in bands of 35-50 individuals, each circulating in a particular territory and using a special cemetery area for their burials. Mortuary ceremonies probably took place annually, when the band gathered in the vicinity of the cemetery, and all of those who had died over the preceding year were interred together in one feature. However, we cannot rule out the possibility that the cemetery was visited more than once in an annual round, or that those who died at any time in the vicinity were given immediate burial there, rather than being held for the next annual ceremony. Either of these eventualities would confound the calculations upon which we have based our estimates of band size, making them too low.

Band structure was probably egalitarian. Although there are differences in the quantities of grave goods placed with individuals, most of these can be explained in terms of age, sex and personal achievement, rather than by invoking inherited or ascribed rank distinctions. In some cases, as with the bear maxilla masks at Hind, a special ritual status may be involved, but even here the osteological evidence indicates that people were not recruited to it on the basis of descent. Also, movement between bands was probably relatively open. Certainly there is no osteological evidence to suggest rigid rules of band affiliation at marriage or a strong descent bias within the band (Spence 1986; cf. also Sciulli and Schneider 1985a).

With the difficulties in associating cemeteries with habitation sites, there has been a tendency to refer to Glacial Kame as a mortuary cult. Even this, however, may be too generous. The usage of the term implies the widespread sharing of a single set of rituals and concepts about death and status. It seems more likely, given the vast area over which Glacial Kame sites are distributed (at least from Indiana to Vermont; Cunningham 1948), that the emphasis on widely circulated exotica like sandal-sole gorgets has masked a considerable amount of local variation. The greater access of females and sub-adults to grave goods at Picton in comparison to Hind, for example, suggests some significant differences in concepts of personhood between the two areas. The two groups may have been drawing on the exotica to express what were fundamentally local sociocultural distinctions. However, it is difficult to define clear patterns with such small cemetery samples. They will often be obscured by other factors, such as the interpersonal relationships between donors and deceased that in such small societies, would surely have found some expression in the grave offerings (cf. Spence et al. 1978:43).

Still, there are indications, like the bear maxilla masks from the Trenton Mountain site in eastern Ontario (Figure 4.17) and Hind, of some more broadly shared ideas. Here we are faced with a question that frequently plagues mortuary studies. Are the inter-site variations in mortuary behaviour that we observe in the archaeological record reflections of real and fundamental differences in mortuary programme, that is, in concepts of person and status and of how these should be symbolically expressed at death? Or are they merely due to changes in the distribution or frequency of the circumstances that trigger particular mortuary procedures? For example, Pfeiffer (1977:143, 150-151) suggests that cremation took place when an individual died during winter or at some distance from the cemetery; it was basically a Glacial Kame technique for curating corpses until they could be given an appropriate final burial. The fact that most uncremated burials at Hind and Picton are largely or fully articulated, indicating their burial shortly after death, supports this explanation. However, cremation at Hind shows no clear age or sex bias (Pfeiffer 1977:35, 150-151), while at Picton it is definitely biased towards adults. This could suggest that age per se was a conditioning factor of cremation at Picton though not at Hind, that is, that the two bands had fundamentally different ideas about the appropriate mortuary treatment for children versus adults. On the other hand, it could simply be that the settlement-subsistence system of the Picton band exposed adults more frequently to the risk of death while far from the cemetery site. A system that required adults to frequently venture on prolonged expeditions for trade, visiting, or the procurement of special resources could result in such a pattern. Without substantial data from domestic sites, it is difficult to interpret these variations.

The McIntyre Site: Eastern Ontario Late Archaic

The McIntyre site (Johnston 1984) is located on the north shore of Rice Lake in the Trent valley of eastern Ontario. Two separate areas were excavated producing a total of 38 Archaic pits of varying size and shape. Aside from one date of 4715 ± 270 B.P., radiocarbon determinations from both areas cluster around 3650 B.P. (Table 4.2).

A frustrating aspect of the site is that, while numerous projectile points were found at McIntyre, no diagnostic points were recovered from the pits, thus making it difficult to assign the ca. 3650 B.P. occupation to a particular Archaic complex. Artifacts from McIntyre indicate multiple occupation periods; ground stone specimens, many of which may pertain to a Middle Archaic component and may be associated with the ca. 4700 B.P. date, are much better represented at McIntyre than they would be on any site in southwestern Ontario. The majority of the projectile points have been analyzed according to W. Ritchie's (1971b) New York typology: the assemblage is dominated by Brewerton corner- and side-notched, Lamoka and Normanskill types. While these types would normally be considered to pre-date 3650 B.P., it may be inappropriate to extend the New York typology "as is" into Ontario. Many of

the typed points are not "classic" examples: the Brewerton points tend to have rather wide notching, and the narrow points (Lamoka and Normanskill) are not always very narrow. At McIntyre these various types seem to intergrade. Thus, the "typical" McIntyre point may be a rather variably made, broadly side-notched or stemmed point. In this respect, McIntyre is hardly very different from many other Archaic sites in the St. Lawrence drainage to the east. For example, similar "sloppily" made points are widely found in the Ottawa valley and Quebec (J. Wright: personal communication).

Notable at McIntyre is the care and detail accorded to recovery and analysis of faunal and floral material; most pits had soil samples taken for flotation. Carbonized floral remains indicate the presence of a variety of nuts, fruits and seeds, including butternut, acorn, hickory, plum, cherry, blueberry and hawthorn. The macro-fauna remains (i.e. those recovered through non-flotation techniques) are dominated by mammal bone, notably deer, dog/ wolf (including a domestic dog burial), beaver, muskrat and bear. The ratio of mammal to fish is similar to the upper levels of Knechtel I and Inverhuron. The micro-fauna (i.e. bones recovered by flotation) suggest, not surprisingly, that fish is more important than indicated by the macro-faunal sample. Particularly well-represented are medium to small sized fish, especially bass family, bullhead and sucker. The season of occupation of McIntyre would seem generally to be sometime from spring to fall.

Another specialist study made at McIntyre is J. McAndrews' (1984) analysis of pollen cores from Rice Lake. McAndrews suggests that gathering wild rice may have been an important activity for the Late Archaic occupants of Rice Lake. His study indicates that by 3700 B.P. there was a dramatic increase in the percentage of grass pollen, much of which may be from wild rice. No wild rice was identified in the plant remains from the site, but these seeds do not preserve well after carbonization.

Summary

In contrast to earlier times, and excepting the Narrow Point Archaic, the Late Archaic of southern Ontario is relatively well-known. Sites appear to be more common than earlier, although not markedly so, suggesting some degree of population increase. There is also some evidence for increasing spatial variability and an accelerating rate of change through time. The increase in the number of sites and, in some instances, good faunal and floral preservation permit the development of more detailed settlement-subsistence models than in earlier times. Also, true cemeteries appear and, although samples are not adequate, they do provide some data on skeletal characteristics and interment ritual through which one can gain insights into band sizes, biological relationships, social organization, health, and religious concepts of the prehistoric occupants of the area. To the previously exchanged native copper are added items such as marine shell and galena suggesting some increase in the practice and importance of long-distance exchange. Most of these trends continue into the succeeding Early Woodland and their possible significance is discussed more fully in that context (see Spence et al.: this volume).

The Question of Ethnic Origins

In the 17th century only two major language families were widely represented among the diverse peoples of northeastern North America -- Algonquian and Iroquoian. At that time Iroquoian speaking peoples could be found in southern Ontario and New York state, with groups such as the Tuscarora and Nottaway in the Mid-Atlantic. More distantly related, but still of an Iroquoian language stock, were the Cherokees of interior North Carolina. Algonquian speaking peoples were located along the mid-Atlantic coast into the Maritimes, throughout the Canadian Shield of Ontario and Quebec, and much of the central Great Lakes. Both linguists and archaeologists have attempted to trace the origin and development of these two language groups, usually placing their genesis during the Archaic.

Linguistic Approaches

Historical linguists have approached the problem of origins through two methods: the reconstruction of language family "homelands" and glottochronology. The first method involves reconstructing proto-languages, using in particular plant and animal names, and then attempting to identify the environmental zone in which the "proto-culture" lived. Glottochronology, a much disputed technique, compares word lists of modern languages (within a single language family), using the degree of similarity to measure the length of time languages developed separately. As will become evident from what follows, there is enormous disagreement among the scholars who have tackled the problem of ethinic and linguistic origins. Some archaeologists find it "... difficult to justify the recurrent efforts to trace historically known linguistic or ethnic entities into the distant prehistoric past" (Funk 1988:37). And it must be admitted that some very elaborate historical reconstructions have been erected on very slim evidence.

Some archaeologists propose that Iroquoian peoples developed "in situ" from a Laurentian tradition cultural base (J. Tuck 1977; J. Wright 1984), thus seeing a 6000 year continuity of Iroquoian occupations in parts of the eastern Great Lakes. Contrary views have been expressed. For example, Byers (1959) hypothesized that the narrow point using Lamoka complex of ca. 4500 B.P. represents the intrusion of Iroquoian peoples into an Algonquian speaking area. Using both archaeological and linguistic evidence, yet another view is advanced by Dean Snow (1977, 1980), who regards the broad point using Frost Island phase peoples of the Susquehanna tradition as the bearers of Iroquoian language into New York state about 3500 years ago.

From linguistic data, Mithun (1984) has attempted to reconstruct the environment and material culture of the proto-Iroquoian peoples. While she is cautious not to identify a specific geographical area as the proto-Iroquoian homeland, the reconstructed environment is decidedly more Carolinian than that for proto-Algonquian since it includes deer, possibly elk, red oak, hickory and plum. Lounsbury (1978) suggests that the northern Iroquoian languages separated from Cherokee about 3500 to 4000 B.P.; that is, during the Late Archaic.

Siebert (1967) has identified southern Ontario as the "homeland" of the proto-Algonquian language at about 3200 B.P. The various plant and animal species reconstructed by Siebert (1967) for the proto-Algonquians suggest a homeland in the Canadian biotic province, especially that part of it in the Upper St. Lawrence valley in southeastern Ontario. Among the species linguistically identified for the environment of the proto-Algonquian homeland are white spruce, tamarack, sugar maple, beech, harbour seal, moose and caribou. Seeber (1982) has noted a good fit between the distribution of the Laurentian tradition (in its strict sense used earlier) and Siebert's proto-Algonquian homeland. The suggestion that Laurentian represents a proto-Algonquian speaking people is contrary to the views of J. Tuck and J. Wright, as summarized above, but consistent with Dean Snow's (1977) hypothesis. Walker (1975) and more recently Fiedel (1987) associate the proto-Algonquians with the Middle Woodland Point Peninsula culture of the eastern Great Lakes, although without specifying if there is an historical connection with preceding Archaic complexes.

Linguists have also attempted to seek deeper historical relationships among North American language families by identifying macro-languages (historical or "genetical" groupings of language families defined principally by phonological and grammatical parallels). Algonquian is almost certainly related to the "Ritwan" (Wiyot and Yurok) languages of California. In turn this larger language group (sometimes called "Algic") may be distantly related to the Wakashan-Salish languages of the Pacific area. These western connections have suggested to some (e.g. Proulx 1982) that the ancestral Algonquian language originated somewhere to the west of the Great Lakes. Fiedel (1987) considers it possible that Algonquian may have been introduced to the Great Lakes by Plano peoples expanding eastwards through the Canadian Shield. Denny (1989) also supports a western origin, but proposes that proto-Algonquian (through language "switching" or assimilation) spread into the Great Lakes from the Ohio valley. He associates this spread with such Late Archaic and Early Woodland mortuary complexes as Glacial Kame, Red Ocher, and Adena.

Chafe (1976) sees a relationship between Iroquoian and the Siouan and Caddoan language families of the Mississippi drainage and Great Plains area. The "centre of gravity", as indicated by 17th and 18th century distribu-

tions, suggests that at some distant point in the past a Macro-Siouan group (Iroquoian, Caddoan and Siouan) occupied an area possibly somewhere within the Mississippi drainage or the Appalachians. Since proposed linguistic time depths within the Siouan language family itself are 7000 to 8000 B.P. (Grimm 1987), this macro-language may date back to the Middle Archaic or even earlier. The vagaries of reconstructing macro-language time depths and past distributions are such, however, that no convincing relationship can be drawn between archaeologically defined complexes and these early language groups.

Linguists, then, trace the origins of the Algonquian and Iroquoian languages back to the Late Archaic, with their respective homelands possibly associated with the Canadian and Carolinian biotic zones. Archaeologists, however, are not in complete agreement among themselves about the time depth of the Iroquoian occupation of the eastern Great Lakes, some, like Snow, dating them only back to the Late Archaic, others, notably J. Tuck and Wright, seeing a continuity from the Middle Archaic Laurentian tradition.

Osteological Approaches

Physical anthropology has not yet provided definitive answers to the question of ethnic origins, or for that matter whether there is even such a thing as a discrete Algonquian or Iroquoian "physical type". J. Anderson (1968) in comparing osteological evidence for the Laurentian of the Ottawa valley (Morrison's Island-6) with the Middle Woodland and Late Woodland (Ontario Iroquois) of eastern Ontario thought he could see a micro-evolutionary trend from Laurentian through to Ontario Iroquois, thus adding support to the J. Tuck-Wright hypothesis. However, this and other studies on Archaic populations from Ontario are plagued by the problem of inadequate samples: very little osteological material is available for the Archaic of Ontario (Pfeiffer 1977), and most derives from Glacial Kame burials at the late end of the sequence.

Recent osteological studies have examined variation among Archaic populations of the Great Lakes area, principally drawing on Middle and Late Archaic sites from Quebec, New York, Wisconsin and Ohio (Pfeiffer 1977, 1979; Schneider and Sciulli 1983). Once again the results of these studies are limited by the often small sample sizes for certain sites, the uneven distribution of available populations through space and time, the possibility of inter-observer error and the probability that certain key sites, such as Frontenac Island in New York, includes several occupational periods. The social dynamics characteristic of small hunter-gatherer bands create further difficulties for osteological reconstruction (Spence 1986). The analyses suggest that there is no one-to-one relationship between biological affinity and culture "type" as identified by archaeologists. Curiously, samples widely separated in space may be quite similar, so that the Laurentian population of Ottawa valley sites (Morrison's Island-6 and Allumette Island-1) resembles sites in Wisconsin more than the geographically closer Lamoka Cole gravel pit site in central New York (Pfeiffer 1979; Schneider and Sciulli 1983).

If there is any pattern emerging it is that populations associated with the Canadian biotic province, whether in Wisconsin or Quebec, tend to resemble one another, in contrast to populations in the Carolinian zone, especially those in northern Ohio. These northern and southern population "tiers" of Great Lakes Archaic populations would seem to roughly parallel the results obtained by linguists in reconstructing the homelands of the proto-Algonquian and proto-Iroquoian languages. The evidence is so tenuous, however, that no one has firmly suggested that the biological groupings of Archaic populations should be linked with particular linguistic groups.

Summary

In summary, we can provide a long, and perhaps discouraging, list of things that we do not know about the Archaic in southern Ontario and the things that we ought to know -- and a rather short list of what it is we really do know.

In almost any part of northeastern North America the 7000-year long Archaic stage is often inadequately documented; Ontario is no exception. There are a number of research areas that must be further developed: the location

and excavation of "key" sites; analytic methods for dealing with small "lithic scatters"; distributional analyses of sites and artifacts; the rethinking of culture-historical constructs; the refinement of typologies.

Of the many Archaic sites recorded for Ontario probably relatively few have good faunal and floral preservation, although such material is essential for reconstructing subsistence practices. It is also such sites that normally provide adequate organic material for radiocarbon dating. After 3000 years or more in the ground under "normal" soil conditions, animal bone is usually not well preserved. Good preservation occurs only in those special circumstances where sites are sealed either by wind or water deposited sediments (e.g. Knechtel I), or by flooding (e.g. Crawford Knoll). Areas where such conditions are likely to exist can be predicted through a knowledge of geomorphological processes, and this can best be done by applying a multi-disciplinary approach to the location and excavation of sites.

The most common "type" of Archaic site in Ontario is the "lithic scatter", where artifacts are largely limited to disturbed plowzone contexts. Lennox's (1986a) report on the Innes site illustrates the amount of information that can be gleaned from the patient excavation and analysis of such plowzone sites. In the past decade there has been a great expansion in the amount of archaeological survey work done for what might broadly be described as development review (survey and excavation done in advance of the construction of subdivisions, highways, hydro corridors, pipelines and so forth). In such surveys certainly hundreds of probable Archaic sites have been identified, most being rather "unpromising" artifact scatters. What has not kept pace with this increase in site identification is the archaeologist's ability to develop methodologies for evaluating the significance from surface data of these sites and to extract meaningful information from them.

There are now enormous quantities of Archaic artifacts held in both public and private hands, but much of this has not been carefully documented. Further, some of this material was actually excavated under controlled conditions many years ago but has not yet been fully reported. Even material lacking good contextual information can be very useful for spatial analyses. Among the few detailed spatial studies for the Ontario southern Archaic are Wintemberg's (1931) study of certain distinctive ground stone and copper tools, J. Wright's mapping of ground stone tools (1962) and Early Archaic projectile points (1978), A. Robert's (1985) examination of locational patterns and Burgar's (1985) multivariate analysis of the Genesee point. Even without new excavations, additional spatial or distributional studies along the lines of those just mentioned would undoubtedly advance our understanding of the Archaic.

Throughout this discussion of the Archaic we have avoided, as far as possible, the use of such higher level culture-historical constructs as "tradition" and "phase". In part this is due to the relatively incomplete knowledge of the Archaic in Ontario. Often we lack key excavated sites that would allow more precise analysis of cultural (and biological) affinities.

But there are other problems as well. The archaeological record for Ontario (and more generally the Northeast) shows change through the Archaic. Yet our knowledge is not sufficient to pinpoint the sources of this change. In particular it is often impossible to state whether a "new" archaeological complex, Broad Point for example, represents an intrusion of other people or change within an existing tradition. To demonstrate either cultural continuity or discontinuity is often beyond our present understanding.

There is something else, and this has to do with the nature of Archaic society itself. Archaic period peoples in southern Ontario lived in hunter-gatherer bands whose social and economic organization was probably characterized by openness and flexibility. The consequence of this flexibility may be that both biologically and culturally, "ethnic" boundaries are weakly defined during the Archaic. If so, then "traditions" and "phases", which must almost by definition encompass a number of local bands, may not exist in any discrete or readily identifiable form.

The section on "ethnic origins" summarized the highly divergent views about the linguistic affinities of various named Archaic traditions. This evident disagreement suggests that such standard archaeological constructs as the "tradition" may be inadequate tools for building culture history, at least for Archaic peoples. The underlying

problem is that these constructs are asked to do too many things: to define sets of tool types; to reflect economic adaptations; to neatly package "ethnic groups", including those presumed to share genetic affinity or language. We need not only new sites but also new ideas.

In sum, our lack of understanding of the Archaic is not only a product of shortcomings in the data base but also of our theoretical and methodological constructs. These shortcomings apply not only at the level of grand culture-historical constructs but also at much more basic levels such as artifact assemblages and point types. For example, it is clear that we need to more rigorously and explicitly define point types through detailed attribute analyses rather than in the largely impressionistic manners which have prevailed in the past. Moreover, although comparisons to such types defined for adjacent areas such as New York state are useful, extreme care should be applied in doing so as indicated in our discussions of the Late Archaic.

Despite these shortcomings, there have been advances. A short time ago one could have summarized the Archaic of southern Ontario in a few pages. As the above review indicates, this is no longer possible. We now have good information on certain complexes, particularly those of the Early Archaic, Broad Point and Small Point, which did not exist just 10 years ago. This information has begun to permit the construction of at least preliminary models for a number of aspects of Archaic life, including economic adaptations, settlement systems, patterns of exchange, mobility patterns, group size, band structure and ritual. If research continues in the future at the pace of the last 10 years, we may expect many of the shortcomings of our present data base and theoretical and methodological frameworks outlined above to be rectified.

Acknowledgments

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CHAPTER 5

CULTURAL COMPLEXES OF THE EARLY AND MIDDLE WOODLAND PERIODS

Michael W. Spence, Robert H. Pihl and Carl R. Murphy

Introduction

One of the earliest systematic archaeological investigations in Ontario was David Boyle's (1897) survey and excavation of Middle Woodland mounds in the Rice Lake - Trent River system (see also Johnston 1968b). Work on Middle Woodland sites has continued since, though in the past few decades this period has received relatively little attention. Most of our Middle Woodland data therefore comes from excavation carried out before the common use of modern investigative techniques like flotation. As a result, with a few exceptions (e.g. Finlayson 1977), our knowledge of Middle Woodland settlement and subsistence systems remains relatively unsophisticated.

Our understanding of the Early Woodland complexes of southern Ontario is even less comprehensive. Few components have been extensively investigated, most of our evidence deriving from chance discoveries or limited mitigation work. A disproportionate amount of the data base is from mortuary sites, and these are often difficult to relate to habitation sites because of the exotic and specialized nature of the artifacts recovered from them.

In the following pages we shall discuss those cultural complexes that fall in the 800 or 900 B.C. - A.D. 700 time span. Some of the better known and more informative sites associated with each complex will be briefly described. Relevant radiocarbon dates are given in Table 5.1. in both uncorrected and calibrated form. Only those dates that seem generally plausible are used; those that clearly could not pertain to the complex in question have been excluded. Calibration follows Klein et al. (1982), the system used by Timmins (1985) to convert Iroquoian dates. The calibrated dates compensate for fluctuations in atmospheric carbon, thus offering a more realistic date in terms of the Christian calendar. However, the radiocarbon measurements in the tables of Klein et. al. (1982) are organized by decade, with calibrated ranges based on a 95% confidence level for six different uncertainties (sigma = 20, 50, 100, 150, 200 and 300 years). The Early and Middle Woodland measurements presented here have been rounded to the more recent decade (e.g. 2045 B.P. to 2040 B.P.) and the closest sigma selected to obtain the calibrated date ranges. This adjusts to some degree for the continued use of an A.D. 1950 baseline. Dates used in the text of this article are based on the uncalibrated dates (the "B.C./A.D. Date " column of Table 5.1). Broader discussion will be organized in terms of cultural complexes, rather than periods or phases, though the basic McKern classification is retained (McKern 1939). Site locations are presented in Figures 5.1 and 5.4.

Early Woodland

The Early Woodland period in southern Ontario (Figure 5.1) includes two complexes, Meadowood (ca. 800 or 900-400 B.C.) and Middlesex (ca. 450-0 B.C.). It is distinguished archaeologically from the preceding Terminal Archaic period by the appearance of pottery, a change that has considerable significance for the archaeologist because of the new analytical possibilities that it offers but which may have been of less concern to the Early Woodland people themselves. Production skills improved during the period, leading at first to thinner and more carefully finished versions of the cord-marked Vinette 1 ware, and eventually to the finer dentate-decorated wares of Vinette 2. In fact, the poorly known Middlesex complex may be viewed as transitional to Middle Woodland, in the sense that some of the later Middlesex people were probably using Vinette 2 ceramics. If we restrict our usage of the term

TABLE 5.1: Radiocarbon Dates for Early and Middle Woodland.

COMPLEX Site	SAMPLE NUMBER	YEARS BP	 SD	BC/AD DATE	CALIBRATED DATE RANGE
MEADOWOOD					
Rickley	I-8878	2410	85	460 BC	790 BC-260 BC
Morpeth South	DIC-1009	2520	50	570 BC	805 BC-420 BC
	DIC-1009*	2650	50	700 BC	1010 BC-625 BC
Wyoming Rapids	I-10651	2480	85	530 BC	810 BC-395 BC
Bruce Boyd	S-1288	2470	65	520 BC	790 BC-410 BC
Boyd Lakefront	NMC-1217	2795	115	845 BC	1245 BC-790 BC
Ferris	I-13535	2420	80	470 BC	790 BC-275 BC
Dawson Creek	S-2204	2940	70	990 BC	1365 BC-905 BC
	S-2205	2675	70	725 BC	1020 BC-640 BC
	S-2206	2320	70	370 BC	585 BC-195 BC
	S-2208	2540	70	590 BC	810 BC-430 BC
	I-9565	2430	85	480 BC	795 BC-385 BC
	I-9861	2420	90	470 BC	790 BC-275 BC
	I-9862	2550	90	600 BC	865 BC-415 BC
Parkhill	I-8867	2980	105	1030 BC	1435 BC-895 BC
	I-8868	2485	100	535 BC	810 BC-395 BC
Donaldson	S-490	2535	150	585 BC	1015 BC-390 BC
	S-119	2480	60	530 BC	790 BC-410 BC
MIDDLESEX					
Morrison's Island 2	S-896	1990	100	40 BC	360 BC-225 AD
Killarney Bay	M-194	2180	300	230 BC	810 BC-330 AD
	M-428	2040	200	90 BC	415 BC-250 AD
	M-1482	1930	130	20 AD	370 BC-360 AD
SAUGEEN					
Wyoming Rapids	I-13163	2100	80	150 BC	395 BC-185 AD
Thede	Gak-2801	2240	100	290 BC	565 BC- 30 BC
	Gak-2953	1180	90	770 AD	620 AD-1030 AD
	Gak-2954	2050	200	100 BC	420 BC-250 AD
	Gak-2955	1260	90	690 AD	595 AD-910 AD
	S-622	1455	110	495 AD	410 AD-765 AD
Donaldson	S-776	1945	75	5 AD	170 BC-235 AD
	Gak-3800	1400	80	550 AD	440 AD-795 AD
Vandenbygaard	DIC-425	1280	80	670 AD	590 AD-900 AD
East Bog	S-2961	1395	100	555 AD	445 AD-855 AD
Pond Mills	NMM-1333	1195	75	755 AD	640 AD-910 AD
Henry Morgantaler	BGS-1363	1285	250	665 AD	425 AD-1050 AD
Boresma	Beta-34702	1710	60	240 AD	75 AD-445 AD
	Beta-34701	1600	80	350 AD	225 AD-605 AD
	Beta-34700	1260	90	690 AD	595 AD-910 AD

TABLE 5.1: Continued.

COMPLEX Site	SAMPLE NUMBER	YEARS BP	 SD	BC/AD DATE	CALIBRATED DATE RANGE
COUTURE					
Robson Road	BGS-1243	1380	120	570 AD	450 AD-860 AD
POINT PENINSULA					
Lake Simcoe					
Dougall	S-508	2185	220	235 BC	765 BC-215 AD
	S-507	1780	110	170 AD	15 AD-440 AD
Rice Lake-Trent River					
LeVesconte Mound	DIC-107	1830	50	120 AD	20 AD-255 AD
	DIC-732	1720	55	230 AD	70 AD-440 AD
Serpent Mounds	M-850	1830	200	120 AD	185 BC-580 AD
	M-1104	2020	75	70 BC	175 BC-200 AD
	M-1105	1660	75	290 AD	225 AD-565 AD
Cameron's Point	DIC-1072	1850	55	100 AD	5 AD-245 AD
Prince Mound	DIC-56	1890	60	60 AD	15 BC-235 AD
Dawson Creek	S-2238	2170	115	220 BC	410 BC- 10 AD
	S-2243	1990	80	40 BC	360 BC-225 AD
	S-2244	1535	75	415 AD	385 AD-610 AD
	S-2207	1405	60	545 AD	565 AD-755 AD
St. Lawrence River					
Bells Island	TO-1468	1800	60	150 AD	40 AD-355 AD
Gordon Island North	S-1821	1870	270	80 AD	410 BC-615 AD
Adelaide Island 2	S-1600	2340	60	390 BC	740 BC-245 BC
Ault Park	S-1938	2420	70	470 BC	775 BC-395 BC
	S-1939	2395	80	445 BC	785 BC-200 BC
Upper Ottawa River					
Marshall's Bay 1	GSC-2061	1750	60	200 AD	60 AD-420 AD
Montgomery Lake 2	GaK-1891	2380	90	430 BC	780 BC-195 BC
	Gak-1892	1860	80	90 AD	140 BC-355 AD
Constance Bay 1	S-578	2440	75	490 BC	780 BC-400 BC
Constance Bay 2	S-798	1855	110	95 AD	130 BC-380 AD
Deep River	I-2084	2030	100	80 BC	380 BC-215 AD
	I-2083	1820	100	130 AD	10 BC-415 AD
Radiant Lake 3	S-1044	2165	75	215 BC	395 BC- 20 BC
	S-1045	1520	60	430 AD	400 AD-610 AD
	S-1289	1300	70	650 AD	600 AD-870 AD
	S-1299	1290	110	660 AD	585 AD-900 AD
	GSC-1662	1870	130	80 AD	170 BC-425 AD
Whitson Lake	GSC-1660	1550	190	400 AD	55 BC-795 AD
Hynes	S-895	2020	70	70 BC	175 BC-200 AD
CbGj-1	S-1268	1240	120	710 AD	600 AD-915 AD

TABLE 5.1: Continued.

COMPLEX Site	SAMPLE NUMBER	YEARS BP	SD	BC/AD DATE	CALIBRATED DATE RANGE
Rideau Lake-Rideau River					
Wyght	S-1675	1645	65	305 AD	230 AD-570 AD
	S-1677	2300	55	350 BC	565 BC-185 BC
	S-1679	1695	65	255 AD	85 AD-455 AD
	S-1680	2460	65	510 BC	785 BC-405 BC
	S-1755	1880	110	70 AD	150 BC-330 AD
	S-1756	1235	105	715 AD	605 AD-1005 AD
	S-1843	2525	120	575 BC	830 BC-405 BC
	S-1846	2355	250	405 BC	820 BC- 10 BC
	S-1852	1290	250	660 AD	415 AD-1045 AD

*re-run of same sample.

Early Woodland to the time of Vinette 1 and its variants, a reasonable date for the period would be ca. 800 or 900-300 B.C., though the terminal date probably varies considerably across the province.

Meadowood Complex

General

The Early Woodland period in southern Ontario starts with the Meadowood complex (ca. 800 or 900-400 B.C.), which also continues into southern Quebec (Levesque et al. 1964; Clermont 1978; Clermont and Chapdelaine 1982) and western New York (W. Ritchie 1955; Granger 1978b). In Ontario, Meadowood is characterized by a wide array of artifacts, some of which appear on both cemetery and habitation sites and so allow us to link mortuary and domestic data together. Diagnostic items (Figure 5.2) include:

1) the distinctive Meadowood "cache blade" or preform, thin and well-worked, with generally squared basal edges and straight to slightly convex bases (W. Ritchie 1955; Granger 1978a, 1978b, 1981; Williamson 1978b, 1980b, 1988; Fox 1981a, 1984a; I. Kenyon 1980d).

2) the side-notched Meadowood point type, often derived from the Meadowood preform, and like it *frequently* recycled into a number of other tool forms such as end scrapers, perforators, and flint strikers for fire-making kits (W. Ritchie 1961:35-36; Granger 1978a, 1978b; I. Kenyon 1980d).

3) a marked preference for the use of Onondaga chert in chipped stone tool manufacture (Granger 1978a; Ellis et al. 1988).

4) Vinette 1 ware, thick and relatively crude ceramics made by coil construction, with conoidal ("cone-shaped") or sub-conoidal bases and with interior and exterior surfaces cord roughened through the use of cord-wrapped paddles in vessel manufacture (W. Ritchie and MacNeish 1949:100; J. Wright 1964; Jackson 1980, 1986b).

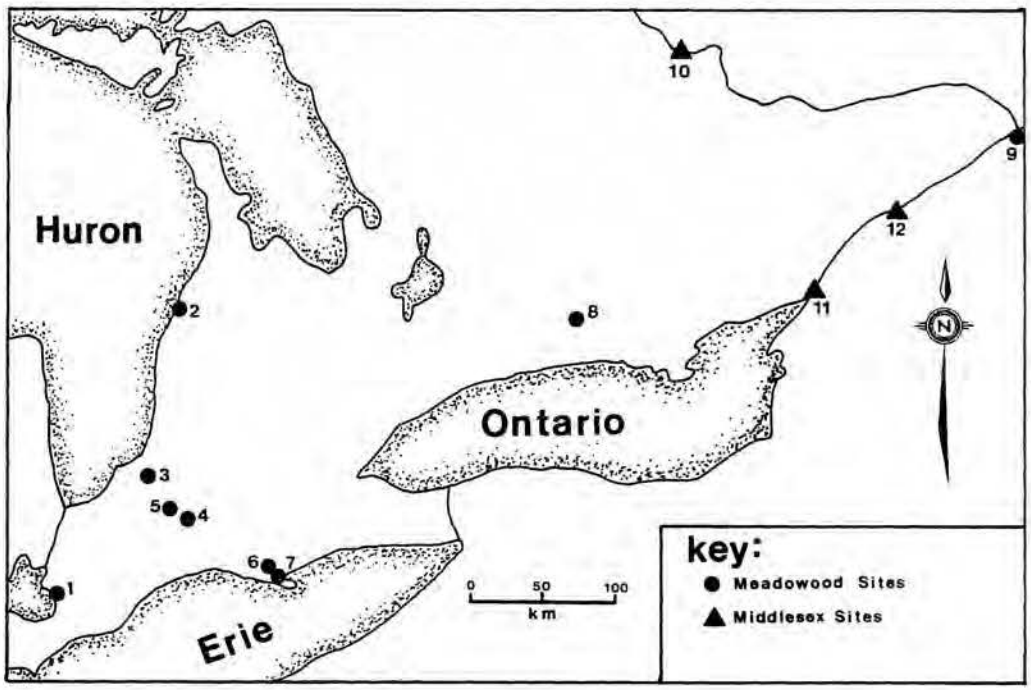

FIGURE 5.1: Location of Some Early Woodland Sites. Sites: 1) Liahn II; 2) Ferris; 3) Wyoming Rapids; 4) Neeb; 5) Welke-Tonkonoh; 6) Bruce Boyd; 7) Boyd Lakefront; 8) Dawson Creek; 9) Pointe-du-Buisson; 10) Morrison's Island 2; 11) See Mound; 12) Long Sault Mound.

5) "trapezoidal" gorgets, large two-hole slate gorgets with straight to slightly convex ends and slightly concave longer sides that flare more widely near one end (Spence et al. 1978: Fig. 13; W. Ritchie 1969: Pl. 60 no. 15, 69 no. 3 - 4).

6) bar and expanded body birdstones with pop-eyes (W. Ritchie 1969: Pl. 60 no. 16; Orr 1914:85).

Other traits characteristic but not necessarily diagnostic of Meadowood are Lamoka points (W. Ritchie 1971b:29-30; Granger 1978b:117, Pl. 4 h-n), though these may represent mixture with earlier components; expanded and T-shaped drills, often derived from Meadowood preforms; end scrapers derived from Meadowood preforms and points; a variety of gorget and pendant forms; fire-making kits of iron pyrites; copper beads and awls; tubular ceramic pipes (known to date only from New York state - W. Ritchie 1969: Pl. 60 no. 13); and the liberal use of red ochre in burials. Articles of marine shell are surprisingly rare given their abundance in the preceding Small Point Archaic.

Meadowood probably evolved directly from the Glacial Kame complex (cf. W. Ritchie 1955:71-73). The Meadowood preforms, points and T-shaped drills are apparently derived from Glacial Kame preforms, drills and Hind points (Spence and Fox 1986:8, Fig. 1.4-1.6). In fact, feature 4 of the Muskalonge Lake site in New York state, assigned by W. Ritchie to Meadowood, is probably either Glacial Kame or at the point of transition between the two complexes. The feature, probably a burial, contains one small piece of burned bone, a great deal of red ochre, a pair of copper adzes, an iron pyrites fire-making kit, 23 disk beads of marine shell, 2 pebble hammerstones, and several notched bifaces (W. Ritchie 1955:18, Pl. 11). Of the latter, two are side-notched Meadowood points while the rest are corner-notched Hind points.

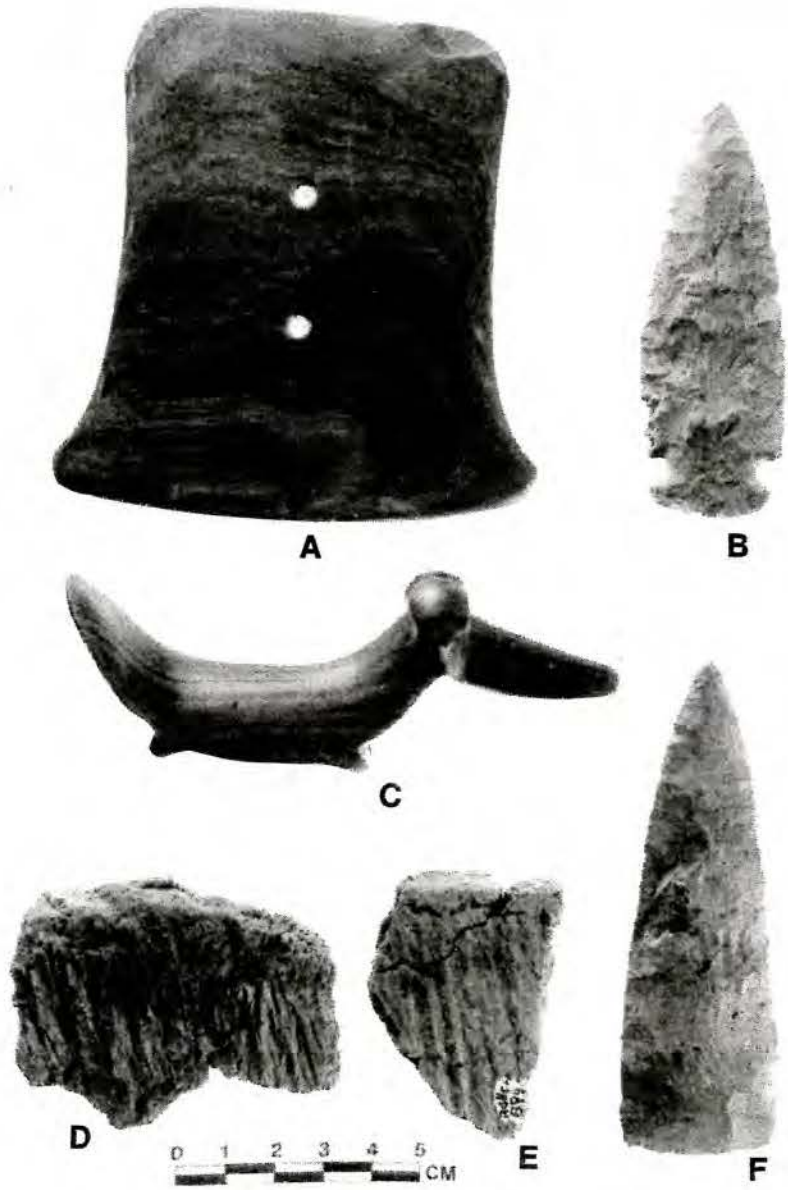

FIGURE 5.2: Meadowood Artifacts. A: Slate Trapezoidal Gorget, Bruce Boyd; B: Side-Notched Meadowood Point, Bruce Boyd; C: Pop-Eyed Birdstone, Jury Collection; D-E: Vinette 1 Rimsherds, Bruce Boyd; F: Meadowood "Cache Blade" or Preform, Bruce Boyd.

Another trait indicating a close relationship between Glacial Kame and Meadowood is the birdstone, differing primarily in the addition of protuberant eyes on the Meadowood specimens. Fire-making kits of iron pyrites with chert or copper strikers occur in both complexes, as do tubular pipes (of stone in Glacial Kame, ceramic in Meadowood). Copper beads, copper awls, galena, red ochre, and cremation constitute further parallels (W. Ritchie 1955:72-73).

The Meadowood complex apparently did not extend into northern Ontario, where the Shield Archaic evolved directly into Middle Woodland Laurel about 200 B.C. (J. Wright 1972a; K. Dawson 1981). The unexpected recov-

ery of a Vinette 1 sherd at Heron Bay, a Laurel site on the north shore of Lake Superior, is believed to be the result of some sort of contact, rather than an indication of an actual Meadowood occupation in the area (J. Wright 1967b:25). The same is probably true of a Vinette 1 vessel from a feature with a date of 180 B.C. ± 280 (GaK - 2803), in a site on Lake Timiskaming (K. Dawson 1981:37). The northern limit of Meadowood may be indicated by the presence of some Vinette 1 sherds at the Frank Bay site (Ridley 1954); an aceramic cache of Meadowood-like points, bifaces, and a trapezoidal gorget at Rosebary Lake in Algonquin Park (Hurley and Kenyon 1970:64-66); and the complete Vinette 1 vessel and Meadowood-like points from the Deep River site on the Ottawa River (Mitchell 1963, 1966: Pl. II 1-2, 4).

The Meadowood occupation of Ontario blends with manifestations in southern Quebec and New York state (Clermont and Chapdelaine 1982; Levesque et al. 1964; W. Ritchie 1955, 1969; Granger 1978b). There were evidently fairly close relationships and frequent interaction throughout the region. The Early Woodland occupations of Michigan and northern Ohio, on the other hand, are clearly different from Meadowood (Ozker 1982:201-202, 208; Spence and Fox 1986:31). Early Woodland ceramics from Michigan and Ohio can be distinguished from Vinette 1 by their flat bases, occasional shoulders, lugs, frequently smooth surfaces (in Ohio), and thicker vessel walls (Shane 1967a; Fischer 1972; Stothers 1974a; Ozker 1982; Garland 1986). The associated lithic assemblages are dominated by the stemmed Kramer point, and there is evidence of some marginal horticulture, at least of squash (Shane 1967a; Ozker 1982). Kramer points are rare in Ontario, though some do appear in the southwesternmost part of the province (cf. N. Adams 1989:14). However, recent work has led to the identification of a slightly earlier phase in Michigan, dated approximately 1050-550 B.C., that corresponds more closely to the Meadowood of Ontario (Lovis and Robertson 1989). It is characterized by Meadowood side-notched points, often of Onondaga chert, and apparently lacks ceramics.

Below are brief descriptions of some of the more informative Meadowood components of southern Ontario and neighbouring Quebec.

Sites

Liahn II (Williamson 1978b, 1980b)

Liahn II is a cemetery site on a sand knoll just east of Mitchell Bay, by Lake St. Clair. Although there are no Vinette 1 ceramics, at least some of the graves are probably Meadowood. One adult and subadult were accompanied by red ochre and approximately 55 Meadowood preforms made of Onondaga chert derived from a primary outcrop. They are relatively uniform, and must have been imported as a set from somewhere to the east, perhaps the Niagara Peninsula (Williamson 1980b:6).

Many of the other graves on the knoll are without red ochre or grave goods, and so could possibly be Late Woodland. More likely Meadowood, or perhaps Terminal Archaic, are five burials with red ochre. Two of these also had grave goods, an extensive necklace of copper beads in one and two large copper awls in the other. The only evidence of cremation is a single burned subadult cranial fragment in a pit with an unburned adult, but no red ochre or grave goods were present.

Morpeth South (Spence and Fox 1986:19; Fecteau 1979)

Mitigation work on a sand knoll near the north shore of Lake Erie exposed six pits, three of which were fully excavated. Although aceramic, the site can be assigned to the Meadowood complex by the presence of Meadowood points on the site surface and by a radiocarbon date of 700 B.C. (revised when re-run from a prior date of 570 B.C. - Fox 1980a). Material recovered from the three excavated pits includes bifacial sharpening debitage and quantities of hickory and walnut shell, suggesting a fall camp for deer and nut procurement and processing.

Neeb (Spence and Fox 1986:19-20)

On a sand knoll by the Thames River near the modern town of Delaware, this multicomponent site included six pits assignable to Meadowood on the basis of Meadowood lithic items, related debitage, and Vinette 1 ceramics. The latter are a late variant designated Pinery ware (see below). Although no associated floral or faunal material could be identified other than some pine, the debitage characteristics and site location suggest another fall deer and nut procurement camp.

Welke-Tonkonoh (Ellis et al. 1988)

This site is located in a plowed field on the Caradoc sand plain west of London, Ontario. The site has not been thoroughly investigated and is known mainly through surface collection. Nonetheless, the site has yielded a large number of Meadowood chipped stone tools (including over 50 points as well as a number of the distinctive end scrapers, drills, cache blades, etc.) from an area covering ca. 0.5 ha. Brief test-excavations by Williamson (1982:50-51) suggest the presence of numerous pit features and postholes at the site.

Wyoming Rapids (I. Kenyon 1979c)

Located at a rapids on the Ausable River, some 15 kilometers inland from the Lake Huron shore, the site includes a small Early Woodland level of fire-cracked rock and charcoal, the latter producing a radiocarbon date of 530 B.C. The full extent of the component is uncertain, obscured by erosion and some two metres of overburden, but it may have been no more than two metres in diameter. A single procurement event may be represented, perhaps a brief microband camp (I. Kenyon 1979c:13). Only deer bone and walnut shell were recovered, suggesting a fall visit. The ceramics include parts of two vessels: much of a Vinette 1 vessel, with interior and exterior cord roughening; and a single sherd of a second vessel with a smoothed exterior, an interior showing relatively fine cording, and a somewhat thinner wall than the other vessel (I. Kenyon 1979c:7, Fig. 6 no. 4). The latter may be a late variant of Vinette 1, perhaps related to Pinery ware.

Ferris (Fox 1984b)

Near the Lake Huron shore at Inverhuron, Ferris produced a radiocarbon date of 470 B.C. Although part of the site is covered by a high dune, excavation in the exposed area revealed a hearth, a probable refuse disposal feature, a Vinette 1 vessel, an unfinished birdstone, a netsinker, and the remains of deer, bass, mollusk, and at least four frogs or toads. Although the full extent of the site could not be determined because of the dune, the density of material indicates a relatively brief occupation. The Ferris site is particularly important because it is the only unequivocally identified warm season (spring-summer) Early Woodland camp in Ontario.

Bruce Boyd (Spence et al. 1978, 1981; Spence and Fox 1986:23-28)

On a knoll near Long Point, by the north shore of Lake Erie, Bruce Boyd is a cemetery site with Terminal Archaic (Haldimand/Crawford Knoll complex), Meadowood, and Late Woodland components. Seventeen burial features with 20 individuals and two caches can be assigned to Meadowood, the largest component represented at the site. Fluorine dating allowed the cultural identification even of burials with no diagnostic traits (Spence et al. 1981).

The two cache or offering features held a variety of chipped stone artifacts, several of which showed signs of considerable use, and some gorgets. One contained chert flakes, a possibly unfinished biface, a broken biface, 11 Meadowood preforms, 5 Meadowood points, 4 end scrapers, and a core. The other held flakes, a bifacial fragment, 17 Meadowood preforms, 10 Meadowood points, 2 drills, a mass of iron pyrites, a slate pendant or gorget fragment, and 2 complete trapezoidal slate gorgets (Spence et al. 1978: Table 1, Fig. 3). The two pits were only a metre apart. Chemical tests of their fills suggest that neither had ever been used for burial, so they must reflect some sort of offering ritual related to the community mortuary system. The morphological and metric variation of the contents

of each pit suggests that each cache included contributions from two or more individuals (Spence et al. 1978:43-44; Fox 1984a:11, Table 3; Spence and Fox 1986:26, Figs. 1.17, 1.19).

Artifacts in the graves include copper beads (with a maximum of 16 beads for one individual), a copper awl, iron pyrites, celts, a gorget, a pendant, abraders, Meadowood points and preforms, and a drill. In one pit an incomplete but still partially articulated elderly male and the head of an infant had been buried together beneath a dense mass of faunal material, some elements of which were still in articulation. The animal bone shows evidence of extensive butchering, including marrow extraction, and some limited carnivore chewing. Represented, but in no case complete, are 6 deer, a dog or wolf, a beaver, a possible woodchuck, a grey fox, 3 wild turkeys, possibly some smaller birds, 5 bowfin, a brown bullhead, 2 channel catfish, a pike or pickerel, a yellow perch, 2 sunfish, 2 bass, a bluegill, and a sucker or redhorse (D. Pihl 1983; Junker-Andersen 1984). The only artifact in the grave was a single copper bead.

This material suggests that a considerable procurement effort, probably occurring in the fall (D. Pihl 1983), and involving several individuals, was associated with the mortuary preparations for the elderly male. The resulting food may have been consumed in a mortuary feast or stored for later use, the remnants being placed with the corpse in an exposed primary interment. Later, probably in the spring, all the remains were collected and given a final burial on the knoll. At that time a second procurement effort, focussed on fish, occurred (Junker-Andersen 1984; J. Casselman: personal communication).

Of the 20 Meadowood individuals recovered in the excavation, 15 are adults, 3 are subadults, and 2 are of unknown age. Only 5 (3 adults and 2 subadults) were cremated. All uncremated individuals were secondary burials, though some were not extensively disarticulated. There was some overlap of pits, indicating the repeated use of the cemetery over some time. Probably burials were made in the spring or summer, as the band visited the area to exploit the rich warm season resources of the Long Point environment. Three of the 17 graves held multiple burials, 2 individuals each. The site average of 1.2 individuals per grave suggests a band population of some 35 people (Spence 1986:88-89; see also Williamson 1978b:83).

A large number of Vinette 1 sherds were also found on the knoll, though ceramic vessels clearly did not serve as grave goods. There is, though, no evidence of a major habitation component on the knoll. The vessels were probably used in mortuary-related activities (for example, the food processing and feasting implied by the extensive faunal deposit with the elderly male), and in the limited domestic tasks associated with brief occupations while the dead were prepared and interred.

Boyd Lakefront (Fox 1983a)

Boyd Lakefront is a multicomponent site by the Lake Erie shore, only 250 metres from the Bruce Boyd cemetery. Limited excavations there exposed parts of two Early Woodland pits. An adult mandible rested at the base of one, while the overlying fill produced abundant bifacial resharpening debris, butternut shell, and elements of muskrat and box turtle. The fill material suggests a late summer or fall occupation, but the mandible indicates an initial use of the feature for burial and, perhaps concurrently with the deposition of the fill debris, a later exhumation. A radiocarbon date of 845 B.C. was obtained on wood charcoal from the fill.

Dawson Creek (Jackson 1980, 1986b, 1988)

Dawson Creek is located on the north shore of Rice Lake. The Early Woodland component consists of six hearths, one of which may also have functioned as a storage or refuse disposal feature, in an area of approximately 20 square metres. Statistical analysis of the seven radiocarbon dates from the features suggests three main periods of use, each perhaps consisting of a number of visits to the area (Jackson 1986b:398-399, Fig. 8). The earliest period, ca. 860 B.C., is represented by features 13 and 14; the next, at about 600 B.C., by features 1 and 17; and the latest, ca. 440 B.C., by features 2 and 15. Faunal and floral remains indicate late summer-fall use, oriented primarily toward the procurement and processing of deer meat and nuts. Each visit was probably only a brief occupation by a

small task group of males. Five large postholes near features 1 and 2 may represent a structure of some sort, about two metres wide by over four metres long (Jackson 1980:14, Fig. 5). However, the presence of Late Woodland material in the area makes it impossible to be sure of the date of the structure.

Early Woodland material includes a number of Vinette 1 and modified Vinette 1 sherds, Lamoka and Meadowood points, and Meadowood cache blades. Faunal remains were poorly preserved, with identifications possible only of muskrat and cervid. Botanical remains are predominantly acorn, but also include seeds of wood sorrel, hawthorn, raspberry, blue beech and dogwood. A single sunflower seed from feature 17 was not complete enough to determine whether or not it was a cultigen (Jackson 1986b:396, 1988: 15, 26, 79).

Pointe-du-Buisson (Clermont 1978; Clermont and Chapdelaine 1982)

Although located in the province of Quebec, on the south shore of the St. Lawrence River near Montreal, Pointe-du-Buisson is included here because the extensive excavations there have provided a great deal of information relevant to the Early and Middle Woodland occupations of eastern Ontario. Pointe-du-Buisson 5 is a Meadowood cemetery with a radiocarbon date of 430 B.C. while Pointe-du-Buisson 4, a multicomponent habitation site nearby, shows evidence of Meadowood domestic use. Four burial pits covered by stones were located in Pointe-du-Buisson 5, but only one was fully excavated. It produced cremated remains of three individuals, all adults or at least adolescents and all incomplete and disarticulated. Clermont (1978:6,14) suggests that they were band members who had died over the preceding year and received individual primary burial, to then be exhumed and cremated together on the group's arrival in summer at the cemetery. However, no crematory facility has yet been located in the vicinity. Grave goods from the pits, all showing the effects of fire, include 2 adzes, 5 gorgets (3 of them trapezoidal), 2 pop-eyed birdstones, at least 41 Meadowood preforms, 11 Meadowood points, 10 triangular end scrapers, 20 fragments of worked bone that represent at least 7 different artifact types, and several other items.

The occupation site, Pointe-du-Buisson 4, is 20 metres to the west, across a small ravine. The Early Woodland material, distinguishable typologically from the earlier and later items with which it is intermingled in the site, includes Vinette 1, Meadowood preforms and points, triangular end scrapers, drills, and some Adena points. Most of the chipped stone artifacts are of Onondaga chert. The Early Woodland material is concentrated in an area about 35 metres in diameter (Clermont and Chapdelaine 1982: Fig. 13). The site probably represents periodic brief occupations by Meadowood hunters and gatherers while they buried their dead in the adjacent cemetery (Clermont and Chapdelaine 1982:153).

Interpretations

There have been numerous other finds of Meadowood material that, taken together, illustrate the broad extent of Meadowood occupation across southern Ontario. Spence and Fox (1986:29, Fig. 1.8) discuss and map several such findspots in southwestern Ontario (see also T. Lee 1952:65, 69-70, 72; Orr 1914:85). The absence of Vinette 1 ceramics on some of these sites is not surprising, as Garland (1986:77) notes that aceramic Early and Middle Woodland sites in southwestern Michigan considerably outnumber those producing pottery. In fact, Lovis and Robertson (1989:235-237) define a preceramic occupation of Michigan with Meadowood points.

A number of sherds displaying interior-exterior cord-marking are known from the western end of the Bothwell Sand Plain in Kent County. About half a kilometre north of the Thames River, near Kent Bridge, a surface collected site has revealed fragmentary birdstones associated with sherds of what appear to be Vinette 1 vessels. Nearby, on the south bank of the river, Meadowood bifaces and Vinette 1 pottery were recovered from a multicomponent site by a local collector. Both these sites are located on sandy knolls adjacent to the clay flats of the lower Thames spillway. These interior sites may represent seasonal components associated with the Liahn II or Rickley mortuary sites near Lake St. Clair. N. Adams (1989:14) suggests that an Early Woodland site with Kramer-like points on Walpole Island may also be related to Liahn II.

A Meadowood component is indicated at the Donaldson site by the presence of 3 Meadowood points, a probable Meadowood preform, an unfinished trapezoidal gorget, an unfinished birdstone, and 18 sherds of Vinette 1 ware, representing at least 6 vessels (J. Wright 1963:30, 34, 41, Pl. XXII Fig. 1; Finlayson 1977:380, 590-591, Pl. 32 nos. 1-3, 13, Pl. 38 no. 1). Vinette 1 ceramics are associated with both of the early radiocarbon dates, 530 B.C. and 585 B.C., so these probably pertain to an early, distinct Meadowood occupation of the site (Finlayson 1977:591-593). J. Wright (1963:54), on the other hand, believes that the intermingling of Vinette 1 and Saugeen ceramics reflects their contemporaneity and the early appearance of the decorated Saugeen series on the Bruce Peninsula. However, it seems unlikely that two such different techniques of vessel manufacture would be practiced by a single group (Spence and Fox 1986:33). Unfortunately, the Early Woodland component has been so extensively disturbed and masked by the later Saugeen occupation that we cannot determine its extent, seasonality, or subsistence practices.

Further south, Vinette 1 has appeared at the Ben Miller-Williams site on the Maitland River (Deller et al. 1986:9) and in three sites in the Pinery Provincial Park (I. Kenyon 1980e:7). At the Parkhill site just to the southeast of the Pinery, three dates were obtained on a deep plow-truncated hearth that also produced a Meadowood point fragment. One late date, from an upper level, was apparently contaminated. A date of 1030 B.C., from charcoal scattered throughout the feature, may also be unreliable. A 535 B.C. date, on charcoal from the deeper, undisturbed levels of the feature, is considered by the investigators to be the most reliable (Roosa et al. n.d.). A cache of Meadowood preforms (Fox 1984a) is reported from the Ausable valley a few kilometres west of the Parkhill site. In the area just west of London, a number of other, sometimes very large, Meadowood sites have been recently reported (Ellis et al. 1988).

The lower levels of the Dougall site, by the Lake Simcoe-Couchiching narrows, produced three Vinette 1 sherds (J. Wright 1972c). Johnston (1984:26, 49) has identified a Vinette 1 sherd and 13 Meadowood points from the Archaic McIntyre site near the north shore of Rice Lake. Vinette 1 was also recovered from the Parker site on the Trent River (J. Wright 1967b:113), and A. Roberts (1985:105-106) has found several Meadowood points along the north side of Lake Ontario.

The Ault Park site on Sheek Island, near Cornwall (see Middle Woodland section), has produced a modest sample of nearly three dozen Vinette 1 vessels from the main occupation areas, predominantly within Trench 1 (R. Pihl n.d.a). This material lacks the exterior decoration, e.g. annular punctations or incised motifs, which appears on some Early Woodland sites further to the west in Ontario and in Vermont. Furthermore, a cache of ten probable Meadowood blanks and one small, steeply corner-notched point were associated with at least one burial within the predominantly Middle Woodland Cemetery I (Trench 3). Like its cousin, the Pointe-au-Buisson site downriver, the Ault Park site is perched on bluffs overlooking major rapids within the St. Lawrence River and was most likely seasonally occupied to take advantage of spawning runs.

One of the more striking features of Meadowood is the occasional occurrence of large caches of well-made Meadowood preforms, several of which have been found in southern Ontario (Fox 1981a, 1984a; Williamson 1978, 1980b, 1988). In some cases, as at Liahn II and Bruce Boyd, these have a clearly ritual context. In others a more secular function, perhaps the storage of trade goods or the retention of moisture for easier knapping, seems likely. At the Cashbrown site in Waterloo, a cache was found associated with a hearth and a few postholes but no suggestion of ritual (Williamson 1988).

A number of caches have been analyzed statistically (Granger 1978a, 1981; Fox 1981, 1984a; Williamson 1978b, 1988). Their internal homogeneity and fine working suggests that, at least in some cases, they may have been the products of semi-specialized craftsmen (Fox 1984a). Granger (1978a, 1981) suggests that many were manufactured in quarries at Onondaga chert outcrops in western New York state, then traded to other areas where they often served as preforms for the manufacture of other items (cf. Clermont and Chapdelaine 1982:69-70; but see Ellis et al. 1988:15). There is also evidence of their manufacture at quarries like Surma and Slack-Caswell in southwestern Ontario (Spence and Fox 1986:21). Beyond the area of primary outcrops, secondary deposits of Onondaga chert along the northern Lake Erie shore were utilized too, though we believe that at least the larger caches were made from primary materials (cf. Williamson 1980b:6).

This relatively high level of exchange among Meadowood groups across Ontario and into Quebec and New York accompanied a drop in access to more distant goods. Marine shell artifacts are very rare or absent in most sites, in strong contrast to Glacial Kame. Copper artifacts occur more frequently in Meadowood burials, but are still rather sparse compared to most Glacial Kame sites. At Picton, for example, nearly 200 copper beads were recovered, while the Meadowood burials at Bruce Boyd produced only 27 and none occurred at the Indian River sites (W. Ritchie 1955). The reasons for this decrease in the long-distance movement of goods are not clear. They may have more to do with changing mortuary practices and value systems than with any real interruption of communications. Another possibility is that exchange networks were redirected to the south, to supply a growing demand in southern Ohio and adjacent areas.

The osteological evidence from the Bruce Boyd site suggests a band of roughly 35 individuals, relatively open in recruitment with a high rate of gene flow with neighbouring bands and no formal post-marital residential preference (Spence 1986:88-89). There is no evidence of inherited rank, though some differences in grave wealth do occur within cemeteries. Cremation continues to be practiced, but its incidence decreases from Glacial Kame, at least in southwestern Ontario. There is only one case at Liahn II, and only a quarter of the Bruce Boyd individuals were cremated. This may reflect a change in the settlement-subsistence system that lowered the risk of death far from the cemetery area. A smaller band territory could be expected to have such an effect, or a reduction in long and potentially dangerous trade expeditions. However, it is possible that factors other than simply distance in time or space from a final cemetery burial were now involved. Some of the uncremated Bruce Boyd burials are extensively, though not completely, disarticulated, indicating a considerable lapse of time between death and interment. At the Indian River sites in New York state bodies were cremated at the cemetery (W. Ritchie 1955).

Despite the identification of a number of domestic sites we still do not have a very clear picture of the Meadowood settlement-subsistence system in Ontario. Most excavated non-mortuary sites are small fall camps for the procurement and processing of deer and nuts. This probably reflects a pattern that had persisted from the Archaic period. Only one definite spring or summer site, the small Ferris camp, is known, though the Meadowood components at Donaldson, Bruce Boyd, Ault Park and Pointe-du-Buisson 4 may have also included warm season domestic occupations. The presence of netsinkers and fish remains at Ferris and Bruce Boyd, and the concentration of Meadowood sites and findspots in areas like Long Point, Rondeau, and Mitchell Bay suggest that fishing was a major spring activity (Spence and Fox 1986:15, 30, Fig. 1.8; Junker-Andersen 1984). Part of a Meadowood net, preserved by burning, was recovered from the Morrow site in New York (W. Ritchie 1969:186, Pl. 66-67), and evidence of weir fishing in Ontario goes back into the Archaic period at the Lake Simcoe-Couchiching narrows (Johnston and Cassavoy 1978). Nevertheless, the spring settlement, when net fishing and communal burial ceremonies probably took place, generally seems to have been relatively small and short-lived.

Well before this time in the Illinois River Valley "packing", the filling of an area with increasing numbers of bands through population growth, community splitting, and immigration, had led to smaller and more intensively exploited territories and, ultimately, greater sedentism (J. Brown 1985). A similar trend is suggested for western New York during Meadowood times where large fall-winter-early spring habitation sites with extensive middens have been identified (Granger 1978b). In southern Ontario, *definitive* evidence of these Meadowood "base-camps" has not yet been reported. However, surface investigated sites such as Welke-Tonkonoh are comparable to the large New York sites in terms of: spatial extent, probable presence of dense feature clusters, suggestions of structures, numbers of artifacts, and choice of site location (Ellis et al. 1988). Thus, they may represent an equivalent aspect of the Meadowood seasonal round in Ontario. Granted this inference, some filling or "packing" may have been occurring in southern Ontario as well. Also suggestive in this regard is that evidence of Meadowood occupation extends further to the north than Glacial Kame, and in their areas of overlap there are certainly more traces of Meadowood (cf. T. Lee 1952: Fig. 3; Spence and Fox 1986: Figs. 1.3, 1.8-1.9). This may to some degree be due to the greater visibility afforded Meadowood sites by Vinette 1 pottery and the distinctive Meadowood lithic complex. Certainly Glacial Kame residential sites (e.g. "Small Point") have gone largely unrecognized until recently. If only burial sites, which should be equally visible archaeologically, are considered, the Meadowood complex does not seem appreciably better represented than Glacial Kame, especially in view of the longer duration of Meadowood.

The Meadowood complex, then, has expanded into areas like the Bruce Peninsula that were only sparsely, if at all, occupied by Glacial Kame people. Probably there has also been more packing, at least in resource-rich areas like Long Point and Lake St. Clair. However, this has apparently not led to a significant increase in band size. This may reflect the apparent absence of major changes in the subsistence system. Despite the presence of squash in the sixth century B.C. in Ohio and Michigan, there is no evidence of its cultivation by Ontario or New York Meadowood peoples. Indeed, no cultigens, either native or imported, have yet been positively identified at this time level in Ontario, though several formed at least a minor component in Archaic and Early Woodland subsistence systems to the south (R.I. Ford 1985).

The widespread circulation of Meadowood preforms does not fully obscure a considerable amount of localized variation within Ontario. Some of this is certainly temporal, but a considerable amount probably reflects spatial variation in settlement-subsistence and cultural systems. The separate handling of heads in mortuary ceremonies, for example, is common at Bruce Boyd but rare elsewhere (cf. Williamson 1978b:107). Cremation appears to be more common at eastern sites like Ault Park and Pointe-du-Buisson 5 than in southwestern Ontario (Spence 1986:88-89). Although preform metrics and morphology show only a limited degree of spatial clustering, the side-notched points derived from them have fairly marked spatial variation (Granger 1981; Fox 1984a).

Vinette 1 ceramics also show some variation, perhaps developing eventually into the different regional wares of the Middle Woodland period (Jackson 1980). In southwestern Ontario both surfaces of virtually all Vinette 1 vessels are cord roughened with little or no smoothing, while at Dawson Creek even the Vinette 1 from the features with the earliest radiocarbon dates is characterized by frequently smoothed surfaces and horizontal wiping of the interior (Jackson 1980, 1986b).

In other areas, though, it is not always possible to distinguish spatial from temporal variation in Early Woodland. In fact, it may be that the Meadowood lithic complex preceded Vinette 1 in some areas. Ceramics are absent at Liahn II, where the large size of the preforms suggests that they are early in the Meadowood sequence (Fox 1984a; Williamson 1988). Also, the extensive necklace of copper beads with another Liahn II burial is more reminiscent of Glacial Kame than Meadowood.

Late in the Early Woodland period a number of Vinette 1 variants appear. Some of the Bruce Boyd sherds have punctates. At Dawson Creek the latest features, dated ca. 440 B.C., produced Vinette 1 vessels with punctates, thinner and smoother walls, finer temper, and thinner and more pointed lips, all changes that herald the Vinette 2 wares of Point Peninsula (Jackson 1980, 1986b:393-394, 396). Smoothed surfaces are also common at Ault Park and Batiscan (J. Wright 1964), though the Pointe-du-Buisson 4 sherds are cord roughened on both surfaces (Clermont and Chapdelaine 1982). One sherd from the Early Woodland level of Wyoming Rapids, which has been dated to 530 B.C., has a smoothed exterior and fine cording on the interior (I. Kenyon 1979c:7). It may be a variant of Pinery ware, a presumably late variety of Vinette 1 in southwestern Ontario characterized by corded surfaces but thinner and with finer cording than is usual for Vinette 1 (I. Kenyon 1980e:7). At one site Pinery ware sherds were associated with a trailed sherd that may be related to the late Early Woodland Shiawassee ware of Michigan (I. Kenyon 1980e:7; Fischer 1972).

Vinette 1 is not a fine ware. As might be expected of the earliest ceramics in the region, they are generally thick and rather friable, with large temper particles. Some vessels from the Bruce Boyd site had not been adequately fired. It is doubtful that they performed the wide range of functions that the harder and better fired Middle Woodland vessels did. Ozker (1982) has suggested that the similar Early Woodland Schultz Thick ware of Michigan was used in the preparation of nut oil, explaining its frequent appearance on fall procurement sites. Although this may indeed have been one function of Vinette 1 in Ontario (Jackson 1986b:400), its absence from Morpeth South, a nut and deer procurement site, and its presence in more northerly sites where nut-bearing trees of the appropriate species are rare, indicate a somewhat more complex situation (Spence and Fox 1986:39). The large number of sherds at Bruce Boyd, where they were presumably used in spring mortuary rituals and in related short-term domestic activities, also suggests a wider range of functions than just nut oil preparation and storage.

Middlesex Complex

General

The Middlesex complex (Figure 5.1) is known almost exclusively from burial components, most of which are in New York and the New England states (W. Ritchie 1944:186-202; 1969:201-205; W. Ritchie and Dragoo 1960; Kraft 1976; Loring 1985a). A few components and some isolated finds also occur along the St. Lawrence River, from Lake Ontario to Quebec City (Clermont 1976; W. Ritchie and Dragoo 1960:39-56; Spence 1967). Some even more distant but clearly related sites have been identified on Georgian Bay (Greenman 1966), in New Brunswick (Turnbull 1976, 1986), and on the central Labrador coast (Loring 1985b:130-131, Fig. 5). Evidence of habitation has occasionally been noted at or near mortuary components, but it has been impossible to clearly associate the two because of the exotic nature of the mortuary artifacts (cf. W. Ritchie and Dragoo 1960:53-56; Greenman 1966).

Several of the more distinctive Middlesex artifact styles (Figure 5.3) indicate influences from or interaction with the complex Adena culture of southern Ohio, Indiana and vicinity, which dates to ca. 500-200 B.C. and is noted mainly for its elaborate burial practices including mound construction (see Dragoo 1963; Swartz 1971). The most diagnostic Middlesex artifact is the blocked-end tube (Figure 5.3), a relatively long and slender tube generally made of ground and polished Ohio "firestone" (W. Ritchie 1944: Pl. 88). They are often identified as pipes because of the occasional presence of soot and carbonized material in the bore (cf. Clermont 1976:39-40; T.L. Ford 1976:67). Also distinctive are a variety of large bifacially worked items, usually made from Indiana, Illinois or Ohio cherts (Figure 5.3). These include long leaf-shaped blades, often made of Flint Ridge, Ohio chert (W. Ritchie and Dragoo 1960: Pl. 10 no. 5; Turnbull 1986: Fig. 12; Spence 1967: Pl. II nos. 1, 3); long stemmed blades (Spence 1967: Pl. III, no. 1, 3, 5; Turnbull 1986: Fig. 11; W. Ritchie and Dragoo 1960: Pl. 8, nos. 1-2, 4-5); broad, thin, ovate-acuminate blades that correspond to the Robbins leaf-shaped blade type of late Adena (Spence 1967: Pl. IV no. 2; Greenman 1966: Fig. 20, centre; W. Ritchie and Dragoo 1960: Pl. 10 no. 1; Dragoo 1963:180, Fig. 10E); large stemmed artifacts that correspond to the late Adena Robbins stemmed blades (Spence 1967: Pl. IV no. 1; Dragoo 1963:180, Pl. 40); broad corner-notched bifaces (Spence 1967: Pl. IV no. 3; W. Ritchie and Dragoo 1960: Pl. 9 no. 9; Greenman 1966: Fig. 19); and very large spade-like bifaces (Spence 1967: Pl. II no. 2, Pl. V no. 2; W. Ritchie and Dragoo 1960: Pl. 11 no. 1).

The lobate-stemmed Adena point has been associated with Middlesex, for example in burial 29 of the East Creek site in Vermont (Loring 1985a: Table 1), though it also appears in a variety of contexts with no other evidence of Adena or Middlesex relationship (cf. J. Wright 1963: Pl. XX no. 10). Other Middlesex characteristics include the occasional presence of burial mounds in the more peripheral components; quadriconcave gorgets (Turnbull 1976: Pl. 3); bar "amulets" and gorgets (W. Ritchie 1944: Pl. 89 no. 21; Loring 1985a: Fig. 12); bust-type birdstones (i.e. with circular as opposed to linear "bar-style" bases) with pop-eyes (W. Ritchie and Dragoo 1960: Pl. 2; W. Ritchie and Funk 1973; Pl. 56; Loring 1985a: Fig. 4 nos. 1-2); semi-keeled gorgets or "boatstones" (W. Ritchie and Dragoo 1960: Pl. 3 no. 1; Kraft 1976: Fig. 11 a-b, 13a, 15 a-b); ground stone cones and hemispheres (Kraft 1976: Fig. 13b); and copper rings (W. Ritchie and Dragoo 1960: Pl. 13 no. 3). Other frequent but less diagnostic mortuary artifacts include thick copper beads, copper awls with a square cross-section, copper celts, fire-making kits of iron pyrites, red ochre, and a variety of chipped and ground stone forms. Artifacts of marine shell are rare in Ontario and central New York, but become more common to the east. Loring (1985a:105) has noted their irregular distribution in Vermont, and suggests that changing styles or social factors are responsible.

Sites

Killarney Bay I (Greenman 1966)

On the north shore of Georgian Bay, the Killarney Bay I site is said by its excavator to have included a burial mound (Greenman 1966). J. Wright (1967b:110) believes that the feature is a sand dune, while William Fox (personal communication) agrees with Greenman that it is artificial. In view of Greenman's extensive excavation of the feature and his detailed geological assessment of the site, we are inclined to accept his evaluation. A radiocarbon

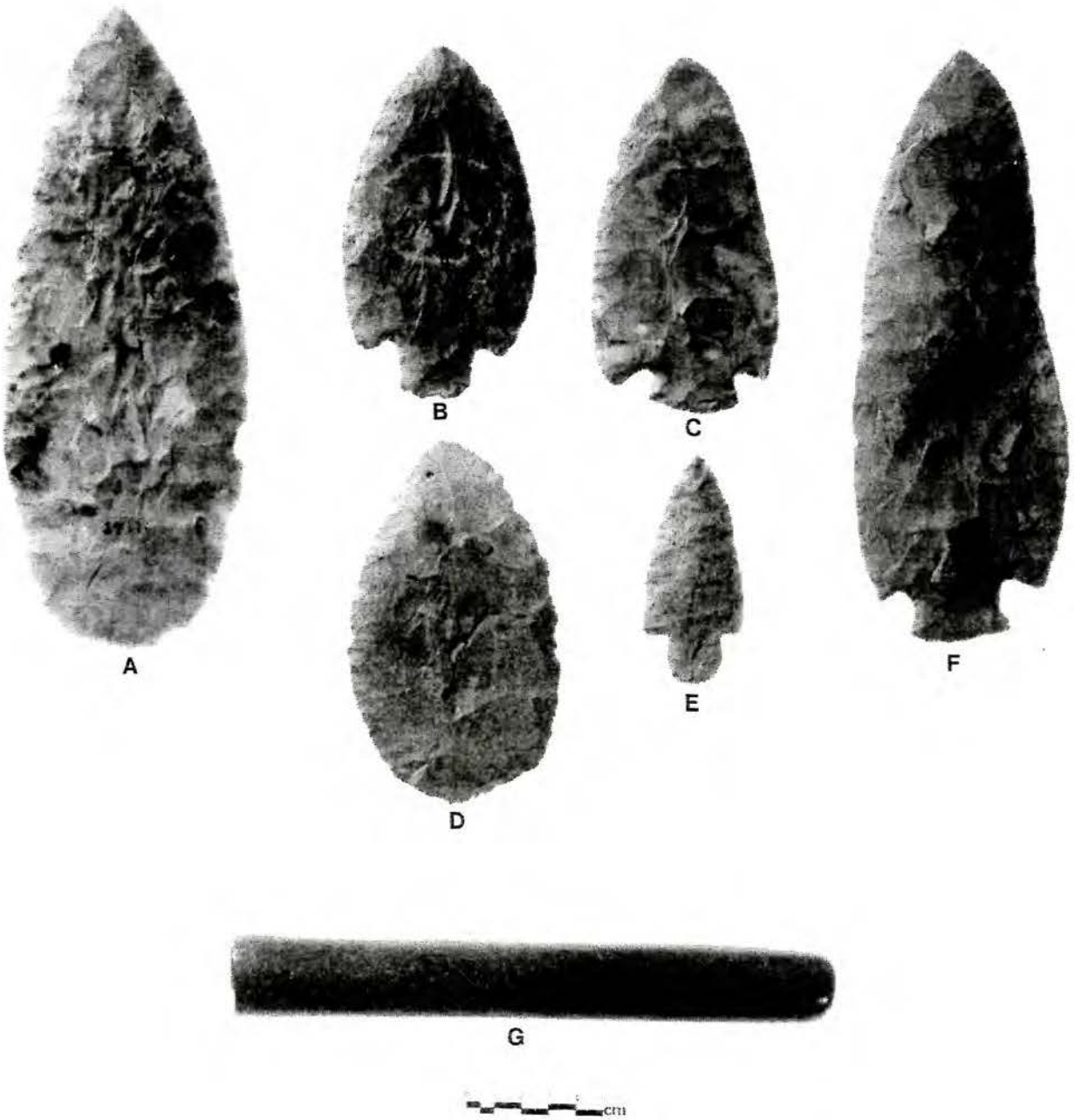

FIGURE 5.3: Middlesex Artifacts. A: Long, Leaf-Shaped Blade of Flint Ridge (Ohio) Chert, See Mound; B: Robbins Stemmed Blade of Bayport (Michigan) Chert, Pike Farm; C: Broad, Corner-Notched Biface, Pike Farm; D: Robbins Leaf-Shaped Blade of Bayport (Michigan) Chert, Pike Farm; E: Adena Point, Provenience Unknown; F: Long Stemmed Blade, See Mound; G: Blocked-End Tube of Ohio Firestone, Pike Farm. Photo courtesy of Royal Ontario Museum.

date of 90 B.C. was obtained from fur associated with one of the burials. Unfortunately, the site has not been fully published. Few details are provided on the finds or their associations, and only a partial list of grave goods is available (Greenman 1966; Ritzenthaler and Quimby 1962:265, 270-271; Fitting and Brose 1971:32-33). Those mentioned include a blocked-end tube, copper beads, large copper awls with square cross sections, a copper beaver effigy, several long copper celts, beaver fur, over 100 "coarse" cache blades, basketry or matting, and a number of large bifacial items. The latter include a Robbins leaf-shaped blade, large stemmed blades, and broad corner-notched bifaces with their hafts still preserved (Greenman 1966: Figs. 19-20). In burial 8, the beaver fur which produced the 90 B.C. date was associated with four copper celts with flattened, narrow polls; a large square-section copper awl or spindle; about 550 small copper beads; and 15 shell beads (Wilmeth 1978:125). From a separate part of the site, beyond the mound, there are a quadriconcave gorget, a stone hemisphere, and a second blocked-end tube (Fitting and Brose 1971:33). Older collections from the vicinity include another blocked-end tube, over 40 thin ovate-acuminate bifaces of Flint Ridge chert, and two bifaces of Burlington Formation (Illinois) chert (W. Fox, personal communication).

The gravel layer associated with the mound apparently predates a disturbed hearth with a date of 230 B.C. ± 300 (Greenman 1966:543), but the standard deviation of 300 years allows the hearth date to overlap the mound date of 90 B.C. It is not clear whether the hearth date and a later date of A.D. 20 ± 130 refer to the Middlesex-related component of the gravel and mound, or to the subsequent Laurel or Point Peninsula occupation represented in the topsoil. The height of the dated features above the lake suggest that they probably are related to the Middlesex occupation. In any event, material from the gravel layer and its stratigraphic position relate it to the mound. Items recovered from the gravel include Adena points and a number of sherds (Greenman 1966: Fig. 13).

The gravel ceramics are plain, with the exception of one fabric-impressed rim, and have grit and limestone tempering. Those who have examined them agree that they are foreign to the area, and are probably related to wares found much further to the south. Fitting and Brose (1971:32) suggest that they may be related to Adena material, and Fox (personal communication) assigns them to Adena Plain. J. Wright (1967b:110) believes they are similar to Havana Plain. The component at Killarney Bay I, then, may actually represent a late Adena site intrusion. The nearest potentially related components are in Michigan. A mound in the St. Ignace area contained a burial with a blocked-end tube, a copper celt, and several large bifacials, one of Flint Ridge material (Fitting 1975:XVI). A cremation from the Dunn Farm site, on Glen Lake in Lebanon County, was associated with a blocked-end tube of Ohio fireclay, stemmed bifacials, a hematite plummet, six disc beads of marine shell, and a number of burned plant remains, including 33 charred wild rice seeds (R.I. Ford and Brose 1975).

Morrison's Island-2 (Kennedy 1980; Spence and Fox 1986:32)

The extended burial of a single adult was found on Morrison's Island, in the Ottawa River. A radiocarbon date of 40 B.C. was obtained on the skeletal material. Associated with the burial were birch-bark wrapping, red ochre, decomposed iron pyrites, 212 copper beads, and four large bifaces, two of them Robbins stemmed blades of Lower Mercer Formation (Ohio) chert and two of Burlington Formation chert. No habitation component was identified.

See Mound (Boyle 1887a; Spence 1967:3-7)

Excavated in 1887, the See Mound was located on Tremont Park Island, one of the Admiralty Islands in the St. Lawrence River, near the east end of Lake Ontario. Some 12-15 bodies had been placed on the surface of the ground and covered with soil to create a mound about 12 metres in diameter by 1.2-1.5 metres high (Boyle 1887a:10). The skeletons are said to have been arranged in a radiating pattern but that observation, made by the property owner who excavated much of the mound, may not be entirely reliable. No data exist on the age and sex composition of the skeletal series, nor on the distribution of the grave goods within the mound.

The skeletal material, the ceramics said to have been found in the mound fill, and probably some of the smaller stone artifacts were apparently either discarded or kept by the owner of the site. The bowl portion of an incised

stone elbow pipe, probably from the mound fill, and a number of grave goods are presently in the Royal Ontario Museum collections. These include 15 copper beads, a copper axe, a chisel-like stone artifact, two pointed lozenge-shaped ground "whetstones", four slate pendants, two quartzite cache blades, two very large spade-like bifaces, three long leaf-shaped bifaces (two of Flint Ridge chert), and five long notched and stemmed bifaces (Spence 1967: Pl. I-III).

The Long Sault Island Mounds (W. Ritchie and Dragoo 1960:39-56)

Two mounds on Long Sault Island, in the St. Lawrence River near Cornwall, were excavated in 1881. Unfortunately, very little information on the excavation has survived. Cremations were present, but we have no data on the balance between cremated and uncremated burials, nor on the age or sex representation in either category. Grave goods recovered from the mounds include three blocked-end tubes of Ohio fireclay; 16 large leaf-shaped, notched, and stemmed bifaces, many of Ohio and Indiana materials; a very large spade-like biface; two large cache blades of Indiana chert; five smaller bifaces of local materials, including some notched and stemmed projectile points; three small cache blades, two of which are of Indiana chert and had been used as strikers in an iron pyrite fire-making kit; a graphite "paintstone"; a keeled gorget; two antler artifacts; 60 copper and 9 marine shell disk beads; a copper ring; a copper awl; and a piece of fabric (W. Ritchie and Dragoo 1960: Pl. 7-14). There are very few data on particular grave associations.

A small midden was found by the shore about one-half kilometer from one of the mounds. Material recovered from it includes several Vinette 2 Point Peninsula and a few Late Woodland sherds. However, the midden is not necessarily associated with the mounds. With one dubious exception, no ceramics are reported from the mounds (W. Ritchie and Dragoo 1960:49,53).

Interpretations

A number of other poorly reported components have been identified across southern Ontario (cf. Spence 1967:7-11; Wintemberg 1928a:178, 180-181). For example, two long leaf-shaped bifaces come from Kent County in southwestern Ontario (Orr 1927:92,94). Though related sites can occur anywhere, actual Middlesex components seem to be restricted to eastern Ontario, especially along the St. Lawrence River. This matches their distribution to the south, where they are more frequent in central and eastern New York and the adjacent New England states (W. Ritchie 1969:202).

The Middlesex complex may also cover a considerable time span. Earlier components may overlap the Meadowood complex, perhaps dating as early as 450 B.C., while the latest components include some traits that apparently reflect Hopewellian (see below) influences. Points of the lobate-stemmed Adena type occasionally appear in association with Meadowood materials, especially in more easterly components like Batiscan (J. Wright 1964:33, Pl. II 10-13), Pointe-du-Buisson 5 (Clermont 1978:12, Pl. 9), and Dennis (Funk 1976:37). At the Cuylerville site in New York state, Middlesex features may have been intruded into an earlier Meadowood occupation area (W. Ritchie and Dragoo 1960:30, 34). Sites in Vermont, however, suggest some contemporaneity between the two complexes (Loring 1985a). At the East Creek site, for example, Meadowood side-notched points and preforms were found in the same graves with blocked-end tubes, distinctive, linear, hollowed-out, groundstone items called boatstones, and bar amulets (Loring 1985a:Table 1). Burial 31 there contained two blocked-end tubes, five Meadowood preforms, copper beads, a plummet, and a largely complete Vinette 1 vessel with an incised triangular motif over the cord-marking (Loring 1985a: Fig. 13). Another Vermont Middlesex component, the Boucher site, also produced a Vinette 1 vessel with incised decoration (Turnbull 1986: Fig. 20). In both sites the incised motif was a triangle filled with horizontal lines, with the apex of the triangle pointing toward the base of the East Creek vessel and toward the rim on the Boucher vessel. Furthermore, a Middlesex-related site in New Brunswick produced fragments of a plain vessel with an incised motif very similar to that of the Boucher vessel (Turnbull 1986:19-21, Figs. 18-19). A vessel of the same plain ware, but with parallel lineal impressions rather than incised triangles, was found in the Augustine mound of New Brunswick (Turnbull 1976:55, Pl. 3). At Scaccia, a Meadowood site in New York which also included a Middlesex burial, one of the features produced Vinette 1 sherds with vertical incising over the cord-marking (W. Ritchie and Funk 1973:108, Pl. 53 no. 2).

Several Middlesex sites, on the other hand, contained artifacts that suggest Hopewell relationships (W. Ritchie and Dragoo 1960:47; Spence 1967; Dragoo 1976:5). Hopewell is a complex, non-egalitarian society which succeeded Adena in the southern Ohio area. It is especially noted for its elaborate geometric earthwork and mound structures; for its extensive trade relationships throughout mid-continental and eastern North America involving the movement of marine shell and shark's teeth from coastal areas, chert and obsidian from sources as far removed as Wyoming, Native copper and silver from the Upper Great Lakes and Cobalt areas, mica from the Carolinas, etc.; and for its distinctive art and ceremonial goods including human and animal clay figurines, platform pipes, multi-reed flutes or "panpipes" covered with thin sheet copper, and geometric and effigy designs on cut mica and copper (see Brose and Greber 1979). The pointed whetstones, large corner-notched bifaces, and large, crude cache blades from Middlesex sites have Hopewellian parallels, for example in the material from the Hopewell Group of Ohio (Moorehead 1922). The presence of burial mounds in some of the more peripheral components may also reflect Hopewell influence. Sites showing these influences may be among the latest Middlesex components, perhaps dating to the last century before Christ. The Killarney Bay 1 site, with a 90 B.C. date, produced some large corner-notched bifaces while the Morrison's Island-2 burial, dated to 40 B.C., includes a Burlington Formation biface very similar to those in a Hopewellian cache from Illinois (Montet-White 1968: Fig. 18).

W. Ritchie and Dragoo (1960) suggested that Middlesex resulted from small migratory groups of Adena who, fleeing Hopewellian domination, moved into the East and Northeast and eventually merged with local populations. The idea was criticized by most commentators (Griffin 1961; Spence 1967; Thomas 1970), and has now been largely displaced by explanations based upon widespread exchange systems. The one possible exception is the Killarney Bay 1 component, which may indeed reflect the movement of a small group from the south into the Georgian Bay area. If so, the site would have to be identified as Adena, rather than Middlesex. In fact, the Middlesex designation should probably be reserved for sites in eastern Ontario, Quebec, New York, and the New England states.

Explanations based on diffusion have often been phrased in terms of a cult. However, it is doubtful that anything so uniform and integrated was involved (Loring 1985a:106). Certainly some practices, ideas, and material items were widely circulated, but a closer inspection of those components for which we have some evidence reveals a good deal of localized variation (Spence 1967; Turnbull 1986:21-22; Loring 1985a:104-105). Incoming goods and ideas were screened, selected and adapted to fit local systems of ritual and social expression. These local differences have been masked by the emphasis on burial components and the often striking exotic goods, and by the inadequate reporting even of these. As residential sites are identified and associated with well-excavated and described burial components, Middlesex will be recognized as simply the mortuary aspect of a number of otherwise distinctive hunter-gatherer bands. Those earliest in the sequence probably date to ca. 450-400 B.C., overlapping and interacting with late Meadowood groups, while the latest sites must have been used by people making the dentated ceramics that characterize Middle Woodland sites in the Northeast.

Middle Woodland

The Middle Woodland period (Figure 5.4) begins with the appearance of ceramics decorated by impressing a squared, toothed stamp (dentate), or "wavy-line" implement resembling the edge of a shell (pseudo-scallop shell), into the clay. In the north these mark the development of the Laurel culture, about 200 B.C. (K. Dawson 1981). In southern Ontario events are less clear. Vinette 1 derivatives with some Vinette 2 characteristics are dated about 450 B.C. at Dawson Creek, but dentate and pseudo-scallop shell stamping had not yet appeared (Jackson 1986b). Dates in the 300-200 B.C. span suggest their initial use some time in the third century B.C. (Table 5.1). A scattering of earlier dates are suspect. The Montgomery Lake site produced a date of 430 B.C. ± 90, but another date for the same feature of A.D. 90 ± 80 is more acceptable. The 490 B.C. ± 75 date for Constance Bay seems associated with Vinette 2 sherds, but Early Woodland material is also present on the site (Watson 1972; Daechsel 1981).

The Middle Woodland period continues to about A.D. 700 and, depending on the criteria used to differentiate Middle from Late Woodland, may even persist to A.D. 900, incorporating Princess Point and perhaps some contemporaneous Western Basin materials from the southwesternmost part of the province (Fox 1984c and next chapter).

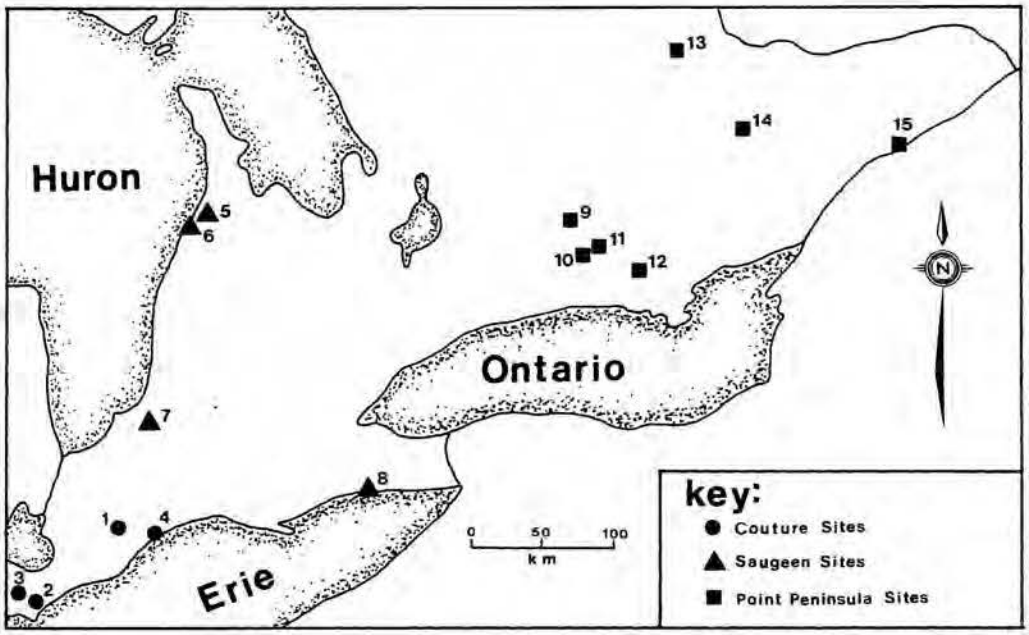

FIGURE 5.4: Location of Some Middle Woodland Sites. Sites: 1) Couture; 2) Robson Road; 3) Rauch 4) Pointe aux Pins; 5) Donaldson; 6) Inverhuron-Lucas; 7) Wyoming Rapids; 8) Port Maitland; 9) Brock Street; 10) Serpent Mounds; 11) Cameron's Point; 12) LeVesconte Mound; 13) Kant; 14) Wyght; 15) Ault Park.

Three complexes developed in southern Ontario during the Middle Woodland period: Couture, in the southwestern-most part of the province; Saugeen, in the rest of southwestern Ontario; and Point Peninsula, in south central and eastern Ontario (J. Wright 1967b; Spence and Fox 1986). Though all share an emphasis on dentate and pseudo-scallop shell stamped ceramics, the three complexes are nevertheless distinguishable in terms of a variety of ceramic criteria: vessel form, coarseness of paste, surface finish, zones of decoration, etc. Elements of their lithic and bone assemblages are also distinctive (J. Wright 1963, 1967b).

The borders between the complexes are not well-defined, in part because our data are not yet adequate to the task and in part, we suspect, because the mobility and high level of intermarriage characteristic of hunter-gatherer societies militate against clear-cut borders. Also, each of the three complexes inevitably encompasses a certain amount of geographic variability (Finlayson 1977:632) because of the large, diverse and ecologically variable areas they encompass. Saugeen, for example, covers parts of both the Carolinian and Canadian biotic provinces, while Point Peninsula in Ontario extends from the Algonquin Park area to the St. Lawrence River.

There is also evidence to suggest some change over time in each of the complexes. Ultimately it should prove possible to subdivide them into two or three phases, with the appearance of influences from or interaction with the Hopewell culture serving as one of the temporal boundaries. Seriations of Saugeen and Point Peninsula ceramics suggest similar trends over time, particularly an increase in dentate decoration and a corresponding decrease in pseudo-scallop shell (J. Wright 1967b:121-123; Johnston 1968a:68-70; Finlayson 1977:578-590; but see Watson 1980). However, the actual stratigraphic evidence for this sequence is weak. Repeatedly occupied but shallow sites like these are very difficult to seriate (Finlayson 1977:596). The situation is further complicated by the fact that some decorative techniques also vary spatially in frequency (J. Wright 1967b). The sequence defined for one region, then, may not be applicable to another.

Couture Complex

General

The Couture complex is the least known of the three Middle Woodland complexes of southern Ontario and, until recently, has been without a working definition or general trait description (cf. Spence and Fox 1986:37-38). It is intended to replace the concept of Western Basin Middle Woodland, used in the past as an umbrella for various materials from southwestern Ontario, Ohio, and Michigan (Stothers 1976:47-49). However, it has recently become apparent that these materials encompass a disparate series of sites and collections (Stothers 1985). We have accordingly decided to create a provisional category for ceramics from the southwesternmost corner of Ontario that do not readily fit into Saugeen or Point Peninsula, although they do seem to bear some relationship to contemporaneous materials from adjacent parts of Michigan and Ohio. Much of the available information is derived from multicomponent sites or private collections with limited locational and contextual data, so this discussion is necessarily limited to general material culture traits and settlement-subsistence implications. The complex extends over a region defined by the river and stream systems draining into Lake St. Clair and the northwestern shore of Lake Erie (Figure 5.4). This territory falls largely within the northern limits of the Carolinian Biotic Province.

The Couture complex displays few direct relationships with the Saugeen peoples to the east. However, small frequencies of cordmarked ceramic vessels distinctive of the Couture complex are recovered from a number of southern Saugeen sites. This indicates some form of interaction between the Middle Woodland complexes of southwestern Ontario, although available data are not yet of the form necessary to determine whether this interaction was based on trade relationships or exogamous marriage practices. Couture vessels are known from the Saugeen Wyoming Rapids and Simons sites on the Ausable drainage (Spence and Fox 1986), and a nearly complete cordmarked vessel was recovered from the Timber Drive site just west of the city of London (R. Pihl 1983).

About 400-300 B.C., southwesternmost Ontario begins to display more associations with developments in the central Great Lakes basin, where plain exterior-cordmarked wares predominate. Couture complex vessels may derive from the western Vinette 1 variant known as Pinery Ware (I. Kenyon 1980e), from the Leimbach cordmarked of north-central Ohio (Shane 1967a), or perhaps from the Shiawassee cordmarked type defined at the Schultz site, Saginaw Bay, Michigan (Fischer 1972). At this time, we are barely able to distinguish early Couture complex vessels from late, and the amount of overlap in decorative motif and quality of manufacture may be substantial. Only one radiocarbon date is available, so until a series of representative ceramics are seriated, chronological controls will likely remain vague. For the present, these vessels are considered to span a temporal period of approximately 300 B.C. to A.D. 500 (Spence and Fox 1986:38).

Couture complex vessels are small, with slightly constricted necks and conical to semi-conical bases (Figure 5.5). Vessels are manufactured by the coil technique and are quite thick, ranging between 8 mm and 16 mm. Temper is a rough granitic material, and particles up to 5 mm are common. Exterior decoration usually consists of coarse vertical to oblique cording extending up to a pointed, rounded or slightly flattened lip. Occasionally, vessel exteriors are dentate or pseudo-scallop shell rocker stamped, which is often restricted to the upper rim area. Interiors are smoothed or channeled and can be decorated with dentate obliques, rocker stamping or incising. Lip notching is the prevalent form of vessel decoration and consists of plain tool or dentate stamped transverse impressions. A shift to the paddle and anvil method of pottery manufacture is seen ca. A.D. 500 to A.D. 700, which marks the beginning of the Riviere au Vase phase of the Western Basin Late Woodland (see Murphy and Ferris: this volume).

It is impossible to adequately describe the Couture complex lithic assemblage (Figure 5.5) at this time, due to the multicomponent nature of sites and a lack of discrete mortuary interments with diagnostic lithics assignable to this stage. The predominant notched biface form of the region is similar to the Saugeen point type (I. Kenyon 1979d), and seems to have functioned as a general utilitarian tool which served in several capacities, ranging from projectile points to, through recycling, hafted scrapers and sometimes drills. Most distinctive of this complex are the frequencies of imported bifaces from southern Ohio, which are often the single diagnostic artifact representing Middle Woodland occupations on many multicomponent sites (Figure 5.5, cf. Murphy 1988a). Snyders type bifaces (W.

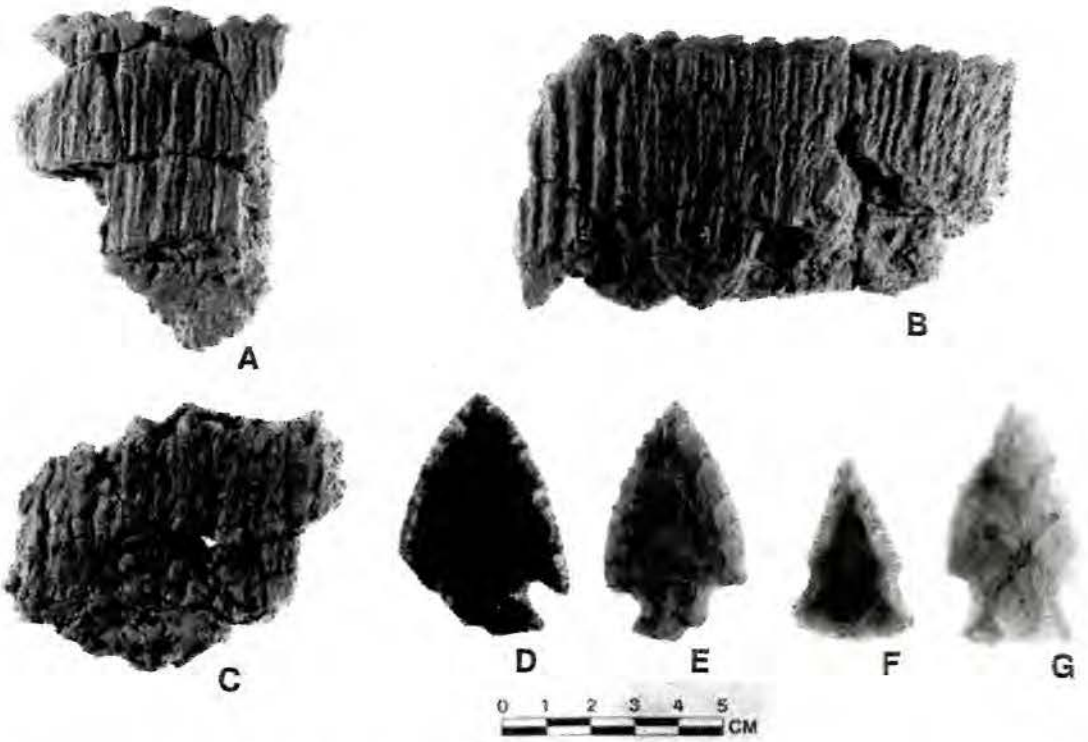

FIGURE 5.5: Couture Artifacts. A-B: Vertical Cordmarked Rimsherds, Couture; C: Vertical Cordmarked Neck Sherd, Robson Road; D: Snyders Point, Butt; E: Snyders Point, East Bog; F: Heavily Reworked Vanport Point of Flint Ridge (Ohio) Chert, Van Bemmel; G: Vanport Point of Flint Ridge (Ohio) Chert, AfHh-50-1.

Ritchie 1971b; Montet-White 1968) appear ca. 200 B.C. and continue for about two centuries, and are then replaced by Vanport points (Fox 1980b; Montet-White 1968). Vanport points have been recovered in large numbers and range dramatically in size, but are generally made from Ohio Flint Ridge chalcedony. The relative frequency of Vanport point findspots in southwestern Ontario strongly suggests that the two centuries following A.D. 0 was the period representing the greatest movement of Hopewellian materials into the region.

Large caches of imported Hopewellian lithics have also been recovered from the Bothwell Sand Plain and the Lake St. Clair delta. The Tinline cache, south of Thamesville in Kent County, included almost 200 ovate Flint Ridge bifaces and several rare Hopewellian prismatic blades (Spence and Fox 1986:37). A number of caches were also reported from Highbanks at the northern tip of Walpole Island, where land leveling may have destroyed a burial mound (Spence and Fox 1986:38; N. Adams 1989:14).

The mortuary practices of the Couture peoples are as poorly known as the rest of the complex, and what little information is available may relate to the period spanning the Middle-Late Woodland transition (cf. Halsey 1976). The Williams site (W. Ritchie 1969:236) probably falls within this transition. David Boyle investigated reports of burial mounds on Pelee Island in 1899, and found evidence of burials in two of these, but with no diagnostic grave goods (Boyle 1900:30-34). T. Lee (1952:67) reports several mounds from the mainland north of Point Pelee, but unfortunately it appears that not a single example has survived into the present decade. T. Lee also investigated rumours of elaborate burials on a natural sand dune south of Thamesville, known as the "Julien Mound". This also produced negative results, although copper beads and a copper chisel were reported to have been recovered by col-

lectors (T. Lee 1952). Natural promontories may be an aspect of Middle Woodland burial locale selection, as there was evidence of Middle Woodland burials in sand dunes at the St. Clair River site, located on the western bank of the St. Clair River at the point where Lake Huron drains southward (Halsey 1976). To date, Late Archaic, Early Woodland, and Late Woodland burials have been recovered from single cemetery sites along the shores of Lake Erie and Lake St. Clair. The absence of recognizable Middle Woodland interments may be simply the result of few diagnostic traits or grave goods; or perhaps burial practices changed to a different pattern during the early stages of Middle Woodland, a pattern which has yet to be documented.

Sites

Couture (Fox 1985b; Spence and Fox 1986)

The Couture site is located on a low sandy knoll in the central portion of the Bothwell Sand Plain, north of the Thames River and south of Cornwall Creek, Kent County. The site was discovered in 1978 following bush clearing on the property, and thirty-three square meters near the centre of the site were subsequently excavated (Fox 1985b). Two primary occupations were found, representing Middle Woodland and early Late Woodland camps. A single cultural deposit represented by a hearth was recorded in the southeastern area of excavation.

Middle Woodland artifacts from the Couture site are represented by two fragmentary pottery vessels and a small number of chert bifaces and debitage. The most complete vessel displayed a slightly everted rim which tapers to a conical base. The pointed lip was impressed with a transverse dentate stamp, and the interior was undecorated. The vessel exterior exhibits vertical cord impressions which become oblique at the shoulder and continue to the vessel base. The wall has well-defined coil breaks. Body sherds average 12 mm in thickness. The vessel orifice diameter was estimated to be 30 cm (Fox 1985b).

A second coil constructed vessel from Couture displays an everted rim with a plain, rounded lip, 5.5 to 5.9 mm in width. Exterior decoration is represented by a single band of oblique dentate stamps over coarse, vertical cord impressions. An associated shoulder sherd displays exterior dentate rocker stamping, and the lower exterior was probably also vertically cord impressed. Interior decoration consists of a single oblique row of dentate stamps below the lip.

Bone preservation was poor, with only white-tailed deer identified to species. Charred plant remains from the single hearth consisted of black walnut, hickory and acorn. Hence, the Couture site likely represents a small, fall-early winter camp relating to nut harvesting or deer hunting activities. Couture is probably only one of a large number of such sites in the general area, but after a few years of cultivation these become virtually unrecognizable on the surface of a ploughed field.

Robson Road (P. Reid 1982; I. Kenyon et al. 1988)

A Middle Woodland component of the primarily Late Woodland Robson Road site on the Lake Erie waterfront, northwest of Point Pelee, was noted by Reid during excavations in 1981. Recent salvage excavations by the Ministry of Culture and Communications identified an irregular subsoil depression (Feature 62), south of the main feature cluster, which contained portions of two Middle Woodland vessels and a large quantity of deer bone. This feature is dated to ca. A.D. 570. The vessels are surprisingly similar to the Couture pots in paste, cord orientation, and thickness. Unfortunately, rim fragments were not recovered from either vessel; slightly everted corded neck fragments suggest that only the rim lip or interiors received decoration.

Rauch (Spence and Fox 1986:38)

The Rauch site represents a small inland camp in North Gosfield Township, Essex County. Brief investigation by Douglas Carey in 1979 identified corded body sherds. The site's location northwest of Robson Road, several miles inland and removed from any major water source, is highly suggestive of what we might expect to represent a

winter settlement where one or more family groups utilized the surrounding sand knolls and lowland forests for winter subsistence.

Pointe aux Pins (Stothers 1974a)

A small sample of Middle Woodland material was collected from the bottom of Lake Erie just east of Pointe aux Pins in Rondeau Provincial Park. The site had apparently eroded into the lake sometime in the past century, as the lacustrine sand deposits of this and other Lake Erie points are gradually shifting west. The artifact sample was analyzed by David Stothers (1974a) during an archaeological survey and test excavation of the park's archaeological resources. A total of ten rimsherds were present in the collection, five of which displayed bands of pseudo-scallop shell impressions over a cord-impressed body surface. Incised, rocker stamped, plain and scarified rimsherds were also present in the collection, as well as lithic debitage and two Saugeen points.

Interpretations

Several Couture complex sites, such as Couture and Rauch, and numerous so-called Middle Woodland find spots represent part of a poorly understood seasonally based settlement-subsistence pattern, involving the exploitation of the sand plains and river valleys of the interior. This interior pattern may have remained unchanged for centuries; however, it is during the Middle Woodland stage in extreme southwestern Ontario that more conclusive evidence of annual seasonal occupation patterns first appear. The significance of the Pointe aux Pins site, together with a number of coil constructed vessels from the multicomponent 11H8a site on Point Pelee (Keenlyside 1978) and a recently documented Middle Woodland site on Walpole Island (N. Adams 1987), lies in the presence of components on the points and islands which extend into Lake Erie and Lake St. Clair. These are all locations rich in the diversity and abundance of plant and animal life which could support larger gatherings of hunters and gatherers for the spring or summer months. These locations were intensively exploited by the succeeding Riviere au Vase phase peoples of the Late Woodland stage, and the later sites display heavy emphasis on the warm period resources of the lakeshore, nearby shallows, and associated marshes. Unfortunately, many of the larger, earlier sites of Rondeau, Point Pelee, and many islands have eroded into the lakes as currents continually shift and replace the lacustrine deposited sand beaches. The settlement-subsistence pattern which is emerging may correlate directly with band territories and catchment zones. It represents the utilization of prime lakeshore environments over the warm months of the year, while the late fall and winter were spent inland along major and minor drainages where forest resources and hunting and trapping grounds were established. The available resources were particular to a northern Carolinian environment, one with substantial physiographic variability and large, shallow lakes. The primary foodstuffs, fish, deer, and nuts, are at various times of the year concentrated along the lakeshores, river valleys and sand plains of the region. The known Couture complex site locations reflect a pattern which was centered on this subsistence distribution, although the intricacies of resource scheduling are far from clear.

Presently, the absence of Hopewellian affinities, other than the easily transportable lithic bifaces, is interpreted to be the result of a combination of factors, which include a strong resource base that maintained the egalitarian character of the social organization, and possibly the channeling of more exotic materials through other north-south routes, for example through eastern Ontario and the Saginaw Valley. Local movement across Lake Erie was frequent, with several Middle Woodland sites known on Pelee Island (Ron Trider:personal communication). The Lake Erie islands and the Lake St. Clair delta may represent the major routes through which exotic lithics entered southwestern Ontario, as the frequencies of Ohio Flint Ridge and Upper Mercer chert on Pelee Island and in the Wallaceburg area appear to be above average in comparison to the remainder of the region.

In summary, the Couture complex represents the Middle Woodland manifestation of a prehistoric occupation with long continuity in southwesternmost Ontario. Related bands are found to the south and west in Ohio and Michigan, each exploiting similar environments and probably interacting with adjacent bands on a regular basis. The social organization of these groups may be that of a patrilineal band, which exploited a well-defined territory containing several key environmental zones crucial for economic maintenance over the yearly subsistence cycle. These territories included expansive lakeshore-marshland environments for spring-summer macroband settlements, inland

sand plains and river valleys for fall deer and mast harvesting, and sufficient variable lands for winter microband survival. A well developed trade or exchange network was operating during the Middle Woodland period, illustrated by the presence of Hopewellian bifaces from some excavated components and their much higher frequency in local collections.

Finally, little cultural change is observed over the entire Middle Woodland period. Components representing the early Late Woodland stages in this area reflect a continuation of this system to the extent that the same site locations continue to be seasonally occupied throughout the transition period. New material culture elements assignable to the early Late Woodland period include temporal markers such as triangular projectile points, paddle and anvil constructed pottery vessels, and a rapid, but short lived, florescence of mortuary ceremonialism (see Murphy and Ferris: this volume). The introduction of corn horticulture sometime in the early Late Woodland period had little effect on the basic settlement-subsistence system, practiced since at least the beginning of the Middle Woodland period, until much later in the prehistoric era.

Saugeen Complex

General

The Saugeen complex has been described adequately only along the shores of Lake Huron (J. Wright 1963; Finlayson 1977; I. Kenyon 1979c). A number of investigators have also noted its presence in other areas, e.g. along the Nottawasaga, Thames and Grand rivers (J. Wright 1967b:117-119; Finlayson 1977:607-610; R. Pihl 1987a). On the basis of these reports its boundaries have generally been set in the London area on the west and along the Nottawasaga and Grand rivers on the east (Figure 5.4). However, there is no unanimity on this. Sites along the Nottawasaga and Grand rivers have been variously assigned to Saugeen, Point Peninsula, or independent complexes (cf. Conway 1975; Stothers 1976; T. Lee 1952:72-73; J. Wright 1967b:117-119; Finlayson 1977:607-610; Spence and Fox 1986:36). As data on these and other areas are published more fully, we expect a picture to emerge of a series of localized complexes extending across the southern part of the province, each only marginally different from its neighbours but more easily distinguishable from its more distant contemporaries. In fact, the dynamics of hunter-gatherer societies may have led to some shifting of boundaries over time and the spatial interpenetration of complexes. The presence of both Couture and Saugeen sites along the upper Thames River may be a case in point (R. Pihl 1983, 1987a:29-30).

Saugeen material culture (Figure 5.6) is best known from the east shore of Lake Huron. Ceramics there are characterized by coarse paste, thick walls, coil construction, conoidal bases, weakly defined shoulders, wide necks, and vertical to flaring rims with rounded or flat lips. Decoration, primarily by dentate or pseudo-scallop shell stamp, covers most of the vessel surface. Seriation by Finlayson (1977:583-590, 618-620, Figs. 33-34) suggests that pseudo-scallop shell occurs most commonly in the earlier part of the sequence, to be gradually replaced by dentate stamping in the later part. Rocker stamping, produced by rocking the pseudo-scallop shell or dentate tool back and forth as one impresses it in the clay, increases throughout the earlier part, then decreases somewhat toward the end. However, the seriation has not yet been indisputably anchored in stratigraphic evidence or a radiocarbon sequence. I. Kenyon (1980e:9) identified a similar complementary distribution between pseudo-scallop shell and dentate ceramics in his Pinery Park survey, but was unable to determine which technique was earlier.

Although the chipped stone assemblage is not rich, a wide variety of items was produced (J. Wright 1963; Finlayson 1977). A cache of 112 biface preforms was found at the Donaldson site (Finlayson 1977:390-395, Pls. 17, 35). Distinctive lithic items include cobble spall scrapers (W. Kenyon 1959: Pl. III; Finlayson 1977:417, Pl. 40 nos. 1-6), end-notched netsinkers (Jury and Jury 1952:Pl. VI), and Saugeen projectile points, with broad, shallow side notches and convex bases (I. Kenyon 1979d; Finlayson 1977:Pl. 32 nos. 10-11). The bone industry has also been characterized as poorly developed, but this may reflect the contexts in which material has been found. Collections from the Donaldson burials and from the water of Parkhill Creek suggest rather rich assemblages (Finlayson 1977:621; Deller et al. 1986:9).

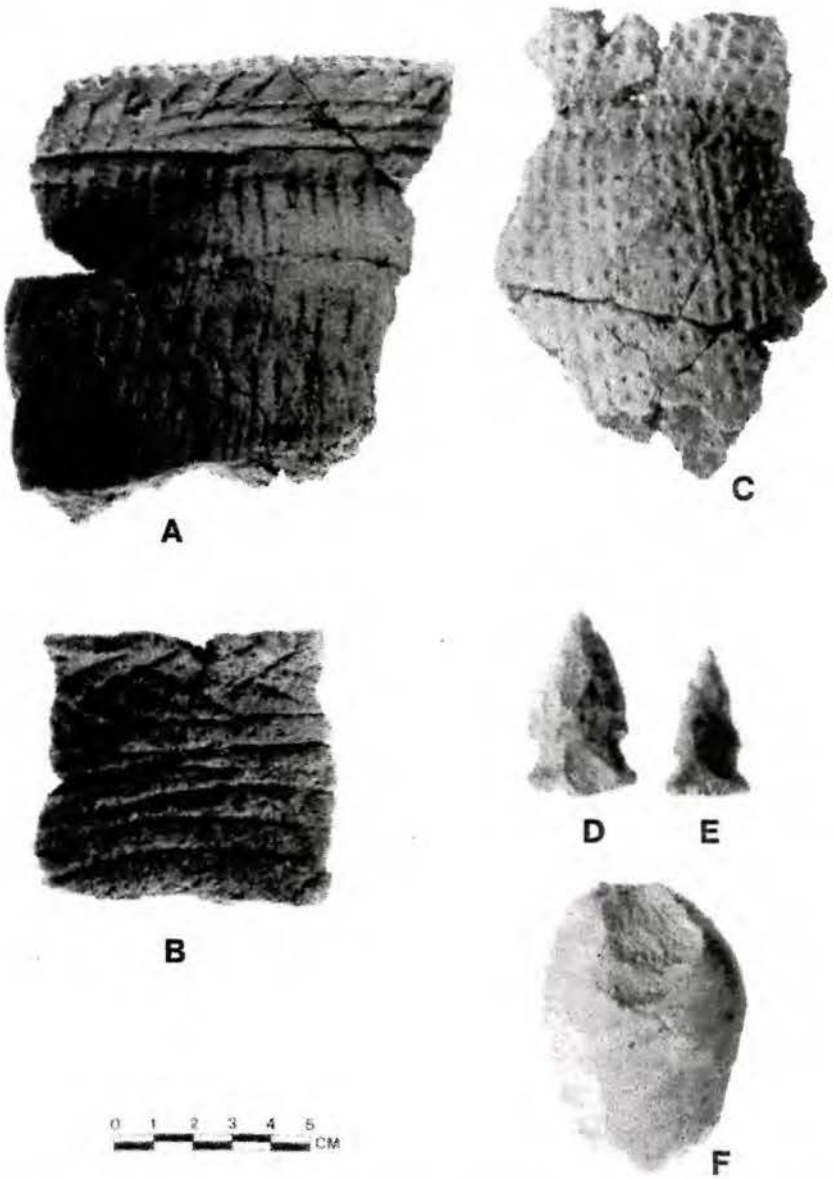

FIGURE 5.6: Saugeen Artifacts. A: Rocker Stamped Dentate Rimsherd, Thede; B: Pseudo-Scallop Shell Rimsherd, Thede; C: Dentate Rimsherd, Thede; D-E: Saugeen Points, Thede; F: Cobble Spall Scraper, Simons.

Sites

Donaldson (J. Wright 1963; J. Anderson 1963; Finlayson 1977; Molto 1979)

Reported in detail by J. Wright (1963) and Finlayson (1977), the Donaldson site lies along the north bank of the Saugeen River, by a major rapids about 3.3 km from the Lake Huron shore. An extensive midden, over 50 metres in length, runs along the base of the upper terrace. It had probably been accumulated by people living on the lower terrace. On the upper terrace postholes and pits extend throughout the excavated area, some 85 metres or

more along the bank. Three long trenches excavated in from the terrace edge exposed sporadic evidence of activity to at least 45 metres inland.

Two small cemeteries were also excavated. A radiocarbon date of A.D. 550 and the grave goods indicate that the Donaldson 1 cemetery is late Middle Woodland. The Donaldson 2 cemetery produced an A.D. 5 date and some Hopewellian artifacts. It lies on the upper terrace, about 15 metres inland from the edge. Three burial pits were identified, but more may lie beyond the excavated areas. Archaeological data are presented in Finlayson (1977:259-284), while Molto (1979) has reported on the osteology.

Burial pit G contained seven individuals and represented at least four burial episodes. Individual GF, a male of 15-18 years, had been extensively dismembered and defleshed, treated with red ochre, then buried with an offering that included a copper panpipe cover, a stone earspool, an undrilled gorget, three cut mica sheets, two pointed lozenge-shaped whetstones, a concretion, an antler-hafted beaver incisor, four bone harpoons, a shell bead, and a variety of other lithic and bone items. Burial GE, a fully articulated male of 18-20 years, had been buried with or after GF, and was accompanied by a second panpipe cover and a beaver mandible. The other five individuals, all either primary burials or too disturbed to determine condition, were a cremated male, a female, and three children. None had grave goods. The fact that the male was an articulated burial, despite cremation, indicates that cremation no longer functioned simply to "package" the corpses of those who had died at some distance from the cemetery, as was suggested for the Early Woodland. The occurrence of the panpipes, important Hopewellian goods, with the two youths raises the possibility that they represent some special inherited status (cf. Young 1976). However, osteological data indicate no particularly close genetic relationship between the two (Spence 1986:90).

Feature H, used on at least two occasions, contained three individuals: a dismembered male, a primary male, and a disturbed child and dog. There were no grave goods. Feature I held only a primary female of 18-21 years, with an offering of two antler harpoons, two bone awls, a bear maxilla, mandible segments of porcupine and muskrat, mandible and maxilla segments of beaver, ulnae from two bears, a celt, a projectile point, and a considerable number of other lithic and bone items.

The osteological evidence does not indicate particularly close relationships among either the males or the females, suggesting that there was no preferred post-marital residential practice in the society (Spence 1986:90). As in earlier societies, band membership was probably relatively open. The distribution of grave goods is not correlated with any particular burial location or treatment, so there is no reason to suspect that the society represented by the Donaldson 2 cemetery was anything but egalitarian. It is not possible to determine the annual mortality of the band since we do not know the length of time over which each burial pit was used, nor the occasions on which further burials were added to a pit. *If* each burial episode represents a yearly event, then an annual mortality of 1.5 individuals might be estimated, suggesting a contributing band of some 50 individuals. The site seems large for this, but it must be remembered that it is the cumulative result of repeated visits over some centuries. Indeed, Finlayson's seriation (1977) shows that different sectors were occupied at different times.

A radiocarbon date of A.D. 550 on the ribs of burial D places cemetery 1 much later in the Middle Woodland period (J. Wright 1963:4-11; Anderson 1963:93-109; Molto 1979). Six graves were identified. Three of these graves (graves C, E and F) each held a single infant or child, two with no grave goods and one with a necklace of *marginella* shell beads. Grave D contained an adult male who had been buried in a partially decomposed state with no offering. Grave A had initially held the body of a newborn infant, which was apparently disturbed during the later addition of two young children to the grave. The earlier infant burial had an offering of *marginella* beads. A small pit in the grave floor held a side-notched point and a beaver incisor, but it is not clear whether they were associated with the earlier infant or the later intrusive children. One of these latter had a necklace of seventeen *marginella* shell beads, four copper beads and two ground and perforated bear canines, as well as two end scrapers (one with an antler handle), a rodent mandible chisel, seven beaver incisors, a possible bone flaker, two chert knives, red ochre, and a possible strike-a-light for a fire-making kit. Grave B also involved two episodes, the joint burial of a 15-year-old male and an adult female intruding on the prior interment of an adult female and two children. The only grave goods were some *marginella* beads with one of the children.

The occurrence of beads made from the whole shells of small marine gastropods, present in all three graves that had offerings, reinforces the late assignment of cemetery 1 indicated by the radiocarbon date of A.D. 550 (W. Ritchie 1969:249). One major change from the earlier cemetery 2, beyond the absence of Hopewell-related grave goods, is the greater concern accorded to infants and young children. More care was taken to include them in cemetery 1; the ratio of infants and young children to older youths and adults is 8:4 in cemetery 1 and 4:7 in cemetery 2. Also, grave goods occur exclusively with the young group in cemetery 1 but only with the older group in cemetery 2. The band size and egalitarian structure apparently remained unchanged (Spence 1986:89-90).

The extensive excavations at the site exposed numerous post holes, many of them in clusters that may represent houses (Finlayson 1977:256, Fig. 16). However, only two structures have been identified (Figure 5.7; J. Wright 1963:11-15, Fig. 4). House 1 was rectangular, 7.1 by 5 metres, with a series of support posts running up the midline and a broad entrance at one end. A hearth was located on the midline, not far from the entrance. House 2, also rectangular, was 6.5 by 4 metres. Two larger posts flanked the doorway, which was in one of the longer sides, and the hearth was located near one corner.

Although mammalian and avian remains are present, fish constituted the major subsistence resource (J. Wright 1963:42-43; Finlayson 1977:460-484). Sturgeon, drum, pickerel, sucker, channel catfish and bass were particularly important. Donaldson was apparently occupied primarily in the spring and early summer, to exploit the spawning fish at the rapids (Finlayson 1977:482-484). The paucity of netsinkers at Donaldson suggests that nets were not used to take the fish (Finlayson 1977:572). Seven harpoons were found, all with burials GF and I.

Inverhuron-Lucas (W. Kenyon 1959; T. Lee 1960; Finlayson 1977)

The Inverhuron-Lucas site lies on the Little Sauble River, some 33 km south of the mouth of the Saugeen River. In the Middle Woodland period the site would have been right by the Lake Huron shore. The occupation area is small. A living floor has been identified by the presence of a hearth, two pits, and two postholes, but no trace remains of walls (Finlayson 1977:524, 531, Fig. 31). Faunal material includes both mammals and fish, though the latter are not as abundant as at Donaldson. A number of netsinkers and copper fishhooks have been found, but harpoons are absent. The abundant floral remains recovered by flotation consist primarily of raspberry, butternut, elderberry and dogwood. A late summer-fall occupation by a small group practicing a wide and relatively unspecialized exploitation of the area's resources is indicated (Finlayson 1977:554-557). A number of burials have been found scattered in the dunes near the site, but no cemetery has been identified. The burials cannot be assigned to any particular period, since there are also Archaic, Early Woodland, and Late Woodland components in the area.

Wyoming Rapids (I. Kenyon 1979c; I. Kenyon and Fox 1983)

A level of Middle Woodland material overlies the small Meadowood component at Wyoming Rapids. It extends, somewhat discontinuously, 100 metres along the river and at least 11 metres in from it. There is a radiocarbon date of 150 B.C. ± 80. Large quantities of fish bone, virtually all from suckers, characterize the level, but no netsinkers were found. I. Kenyon and Fox (1983:9) interpret the site as a spring- early summer macroband settlement focussed on the spawning fish, much like the Donaldson site. Of particular interest is the presence, among predominantly Saugeen material, of a few Couture complex vessels.

Port Maitland (W. Ritchie 1944:181, Pls. 78-85, 1969: Pl. 81).

The Port Maitland site consists of two burials found near the mouth of the Grand River, in the grey zone between the Saugeen and the Point Peninsula complexes. Our placement of it in the Saugeen section is purely a matter of taxonomic convenience. Although no ceramic vessels were found, the nature of the grave goods (Figure 5.8 and 5.9) led W. Ritchie (1969) to assign the burials to his late Middle Woodland Kipp Island phase. The adult male was accompanied by an impressive offering, dispersed to some degree when the burial was discovered. Items that were documented include red ochre, possible mica sheets, five tubular conch *columella* shell beads, a straight-based steatite platform pipe, a ceramic right-angled elbow pipe, two large and elaborately incised antler combs (W.

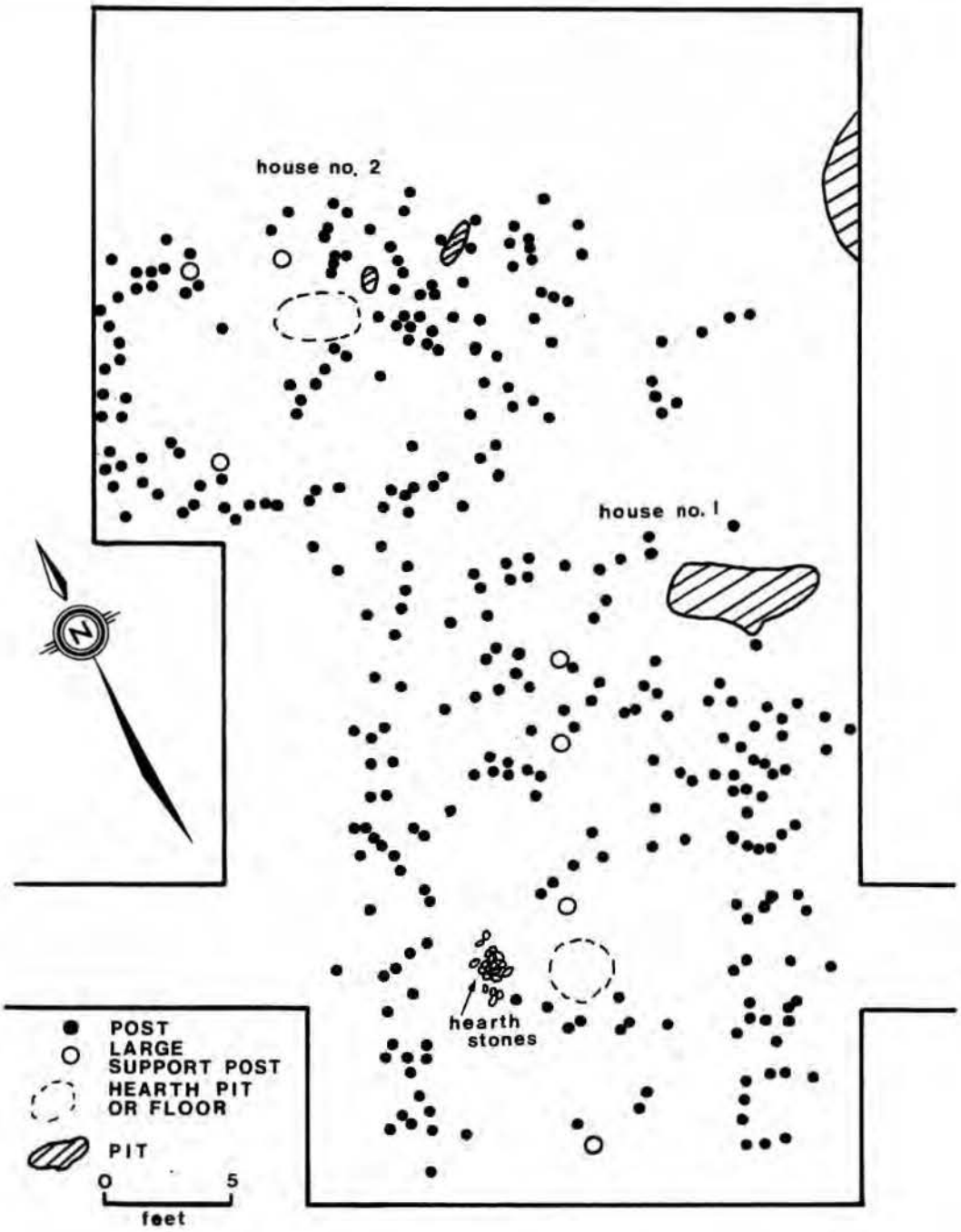

FIGURE 5.7: Houses, Donaldson Site. Redrawn after J. Wright and Anderson (1963:12). Note that post diameters are not to scale.

Ritchie 1944: Pl. 87, no. 9), two conical antler points, an antler flaker, a well-made chert knife with a concave base, a slate pendant, five crude preforms and a variety of other goods (W. Ritchie 1944: Pls. 78-80). The second grave contained the flexed skeleton of a child with three unilaterally barbed antler points, two conical antler points, two centrally-perforated bone needles, an antler-hafted beaver incisor, several beaver and porcupine incisors, one wood-

FIGURE 5.8: Port Maitland Child's Grave Artifacts. A: Ovate Biface Blank; B: Trianguloid Biface Preform; C: Port Maitland Type Point; D: T-Based Drill made on Port Maitland Point. Photo courtesy of Royal Ontario Museum.

chuck incisor, three antler flakers, two bone awls, two crane humerii, two fragments of turtle shell, a number of worked and unworked fish spines, one Levanna (unnotched triangular) and seven Port Maitland (small, triangular, notched) points, two thin triangular preforms, two crude ovate blanks, and a variety of other bone, antler and stone items (W. Ritchie 1944: Pls. 81-85, 1969: Pl. 81; William Fox: personal communication).

Although the circumstances of the initial discovery were less than ideal, enough material was recovered to show that the two burials were related and date to the later part of the Middle Woodland period. Both included conical antler tine points, antler flakers, unmodified antler tines, chert preforms, abrading stones and expanded base drills. Traits indicating a late Middle Woodland date are the incised antler combs, the tubular conch *columella* beads, and the mixture of Levanna and Port Maitland point forms.

Interpretations

Finlayson (1977) has reconstructed the settlement-subsistence system of the Saugeen band that lived at the Donaldson site. In the spring, small microbands that had wintered separately gathered at the rapids to exploit the spawning fish and to bury those who had died over the preceding year. At some point in the summer this macroband broke up, the component microbands scattering to a variety of camps along the Lake Huron shore, like

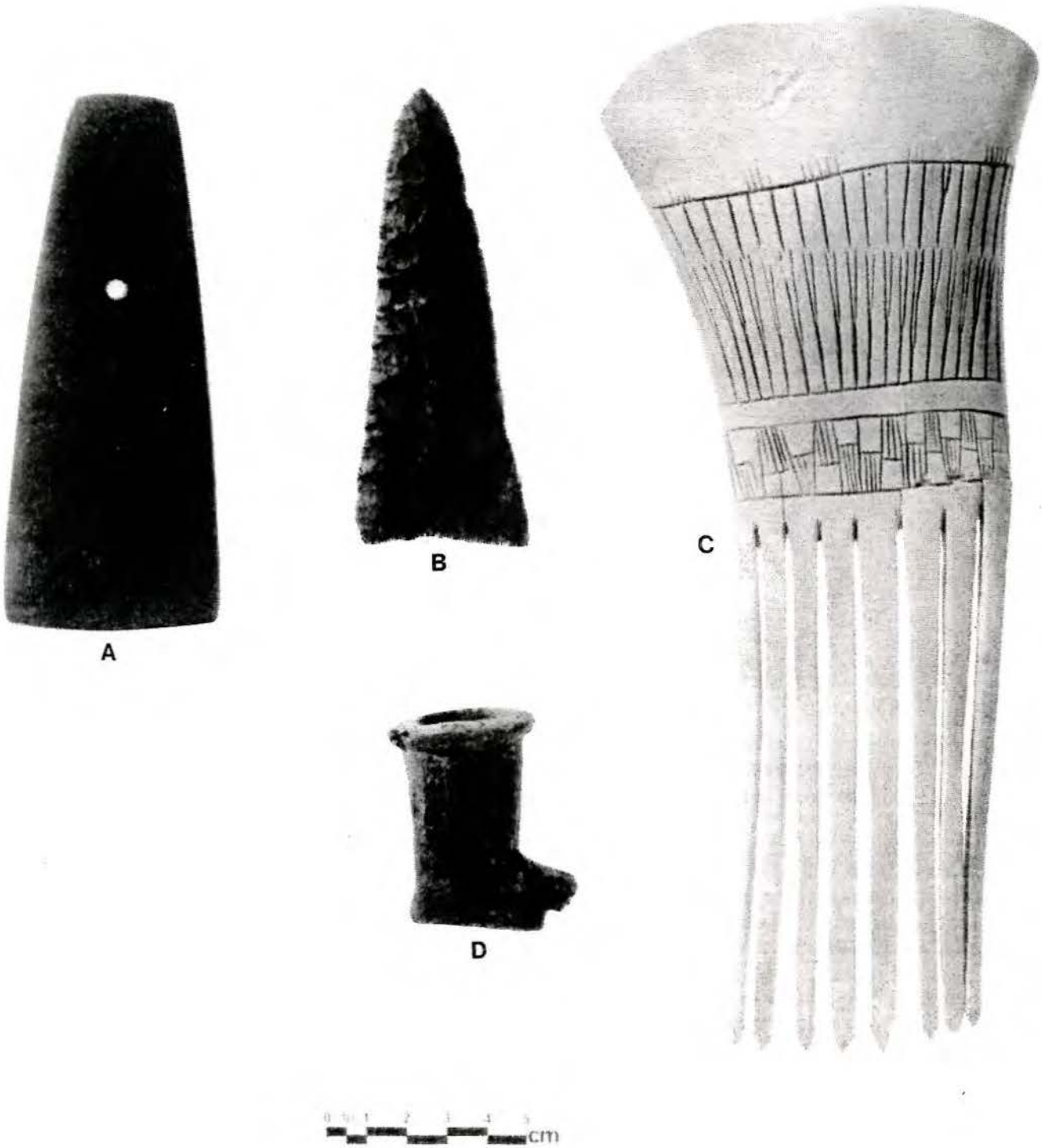

FIGURE 5.9: Port Maitland "Chief's" Grave Artifacts. A: Banded Slate Pendant; B: Triangular Biface Knife; C: Incised Antler Comb; D: Ceramic Pipe. Photo courtesy of Royal Ontario Museum.

Inverhuron-Lucas, where they subsisted on a wide variety of resources. Late in the fall, they moved into the interior to winter microband camps. The Thede site, on the Saugeen River 17 km upstream from its mouth, may be a winter camp, but the evidence is inconclusive (Finlayson 1977:574-575).

I. Kenyon (1980e:9-13) has noted the same pattern in the Pinery Park - Ausable River area, identifying the large spring-summer macroband fishing site at Wyoming Rapids and a number of smaller summer-fall sites nearer to Lake Huron. The faunal material recovered from one of the latter, Vandenbygaard, consists largely of deer but also includes a variety of other mammals, birds and fish. The site was probably occupied in the summer, primarily to hunt large mammals (Hamalainen 1975). The Burley site (Jury and Jury 1952) may be another example. Net-sinkers are common on summer sites, so nets were probably used in lake and/or river fishing after the spawning period had passed (Deller et al. 1986:11). The Cutler site (R. Pihl 1981, 1987b), located along the Ausable River within the Pinery Provincial Park, seems to have functioned primarily as a stone tool manufacturing area. While seasonality cannot be established due to the lack of faunal and floral remains, it was likely occupied during the warm weather months when exploitation of the Kettle Point chert source several kilometres away coincided with lacustrine/riverine resource exploitation. Some possible winter camps have been located about 25 kms inland (Deller et al. 1986:11). The same system is indicated for the Maitland River (Deller et al. 1986:11), and a modified version of it has been suggested for the Saugeen sites along the middle reaches of the Thames River (R. Pihl 1987a:30).

The Schoonertown site is near a rapids on the Nottawasaga River, 7 kms upstream from its mouth at Georgian Bay. The site produced quantities of clam shell and fish bone, including sturgeon (Conway 1975; Hamalainen 1975). No netsinkers were found. It was occupied for a brief period in the spring, to exploit the spawning fish. The fish bone consisted largely of heads, with relatively few vertebrae, suggesting that the fish were being processed at the site for consumption elsewhere. A similar situation in the Late Woodland component of the Dougall site has been related to the Huron practice of catching and preserving quantities of fish for use over the winter (J. Wright 1972c:15-16).

Although Saugeen material has been found throughout the region, there is no evidence of a major population increase. Meadowood material is also widespread (Spence and Fox 1986: Fig. 1.8). The Middle Woodland components may be more visible archaeologically because the period is longer than Meadowood, and because Middle Woodland ceramics were better made and, we suspect, used in a wider range of activities.

However, the Middle Woodland settlement-subsistence system may have been different. The spring macroband camp or population aggregation site focussed on spawning fish seems to be a new feature. Some of the macroband sites also have Early Woodland components, but in the one case where adequate data are available, the Wyoming Rapids site, the Early Woodland occupation was quite different: a fall camp oriented toward mammal hunting and nut collection (I. Kenyon and Fox 1983:9). In fact, we have yet to identify an Early Woodland spring macroband site. They may not exist, or they may have been occupied too briefly to be easily detected. Recent evidence raises the possibility that the principal Meadowood macroband aggregation may have taken place in the winter (Ellis et al. 1988; cf. also Granger 1978b).

The suggested ceramic sequence, with a decreasing use of pseudo-scallop shell and an increase in dentate and rocker stamping, seems convincing but has not yet been firmly established. J. Wright (1967b:121-123) believes that dentate and rocker stamping in Ontario reflect Hopewellian influences. If so, the shift to them from pseudo-scallop shell may have occurred around 100 B.C.- A.D. 1, when Hopewellian influences seem to have first penetrated the province. Finlayson (1977:583-586) points out that the ceramics from the fill of the Donaldson burial pit with the Hopewellian material are predominantly pseudo-scallop shell, and suggests that they represent an earlier use of the area.

Hopewellian influences seems to have had no marked effect on the societies of the area. Hopewellian goods were placed with some burials, and exotic cherts like Flint Ridge and Upper Mercer appear in the region (Deller et al. 1986:9), but there is no indication in the Donaldson 2 cemetery of a rank system or of a larger or more formally structured band (Spence 1986:90; Spence et al. 1979:119). In fact, the copper panpipes do not seem to have carried

the same symbolic meaning in Ontario as they did in Hopewellian-related societies in the U.S., where they are associated primarily with adult males of high status (Young 1976).

Contacts with the Hopewellian interaction sphere to the south appear to have ended by A.D. 200-250, but the Saugeen complex probably persisted to at least A.D. 700 (Finlayson 1977). Eight relatively late radiocarbon dates have been associated with Saugeen occupations (Table 5.1): A.D. 665 for the Henry Morgentaler site; A.D. 550 for the Donaldson 1 cemetery; A.D. 495, 690 and 770 at Thede; A.D 670 at Vandenbygaard; A.D. 690 for Boresma; and A.D. 755 for a small Saugeen component of the Pond Mills site. The pottery associated with the Thede site is primarily dentate stamped, with lesser amounts of rocker stamped dentate and very little pseudo-scallop shell (Finlayson 1977:586-589). The Vandenbygaard ceramics include six dentate, eleven dragged stamp, eleven rocker stamped dentate, two punctate, one trailed, one plain and one possible but uncertain cord-wrapped paddle (I. Kenyon 1977, 1980e). The Saugeen material at Pond Mills is confined to layer 5 of midden 303 (Poulton 1985a). This stratum produced radiocarbon dates of A.D. 755 ± 75 (NMM-1333) and A.D. 1065 ± 80 (NMM-1332). The former date is acceptable, while the latter is either contaminated or pertains to some of the later material in the midden. A thermoluminescence date on a pseudo-scallop shell vessel of A.D. 830 ± 230 is, given its wide standard deviation, acceptable (Poulton 1985a:125). Ceramics that can be linked to the Saugeen occupation with some confidence are a vessel with pseudo-scallop shell decoration, one with rocker stamped pseudo-scallop shell, one with rocker-stamped dentate, and one with smoothed over cord treatment (Poulton 1985a:118-120). Associated projectile points are of the Port Maitland and Saugeen types (Poulton 1985a: Pl. 29u-v). Cord-wrapped stick or paddle decoration (see Fox: next chapter) is absent at Thede, very rare at Donaldson, and possibly represented by only one sherd at Vandenbygaard. Material of this sort at Pond Mills probably pertains to later occupations (Poulton 1985a:124-125).

The late Middle Woodland Kipp Island phase of New York, dated to ca. A.D. 500-800. is characterized by decreasing proportions of dentate stamped and increasing proportions of cord-wrapped stick pottery, polished stone pendants with a single suspension hole near one end, ceramic and stone elbow pipes with the bowl at an obtuse or right angle to the stem, straight-based platform pipes of stone, thick and rather crudely worked chert bifacial preforms, incised antler combs, multiple barbed harpoons or points with the barbs along one side ("unilateral") of bone and antler, antler-hafted beaver incisors, tubular beads of conch *columella*, beads made from the whole shells of various small gastropods *(marginella, olivella* and *anculosa),* and projectile points of the Jack's Reef Pentagonal, Jack's Reef Corner-Notched, Levanna, Long Bay and Port Maitland types (Figures 5.8, 5.10; W. Ritchie 1969:228-253, 1971b). The small, concave base, triangular Levanna points and cord-wrapped stick decorated ceramics increase through the phase until, by the following Hunter's Home phase, they supplant the other forms in New York state.

All of the above traits appear in Ontario, and seem generally to serve as markers for Saugeen and Point Peninsula sites in the A.D. 500-700 range, like the Port Maitland and Donaldson 1 cemeteries. At the Fitz site, a small, aceramic, winter hunting camp near Woodstock, projectile points include two Jack's Reef Pentagonal, four Levanna and three Port Maitland specimens (Lennox 1986b). However, it appears that cord-wrapped stick ceramics are rare or absent on these late Saugeen sites. Their subsequent rapid increase and the concomitant dominance of Levanna points mark the development of Princess Point (see Fox: next chapter). Although the data are somewhat limited, there is evidence to suggest a relatively smooth continuum in terms of grave goods and burial practices between late Saugeen burial components, like Donaldson 1 and Port Maitland, and the Surma site, a Princess Point component (Emerson and Noble 1966; Stothers 1977:75-76). Shared items include tubular conch *columella* beads, beaver incisors, abrading stones, pendants, Levanna points and platform pipes. There is also osteological evidence of some biological continuity between the peoples of Donaldson 1 and those of Surma (Molto 1979). It remains to be seen whether the excavation of habitation sites will support this impression of continuity, extending it beyond the mortuary system into other aspects of life.

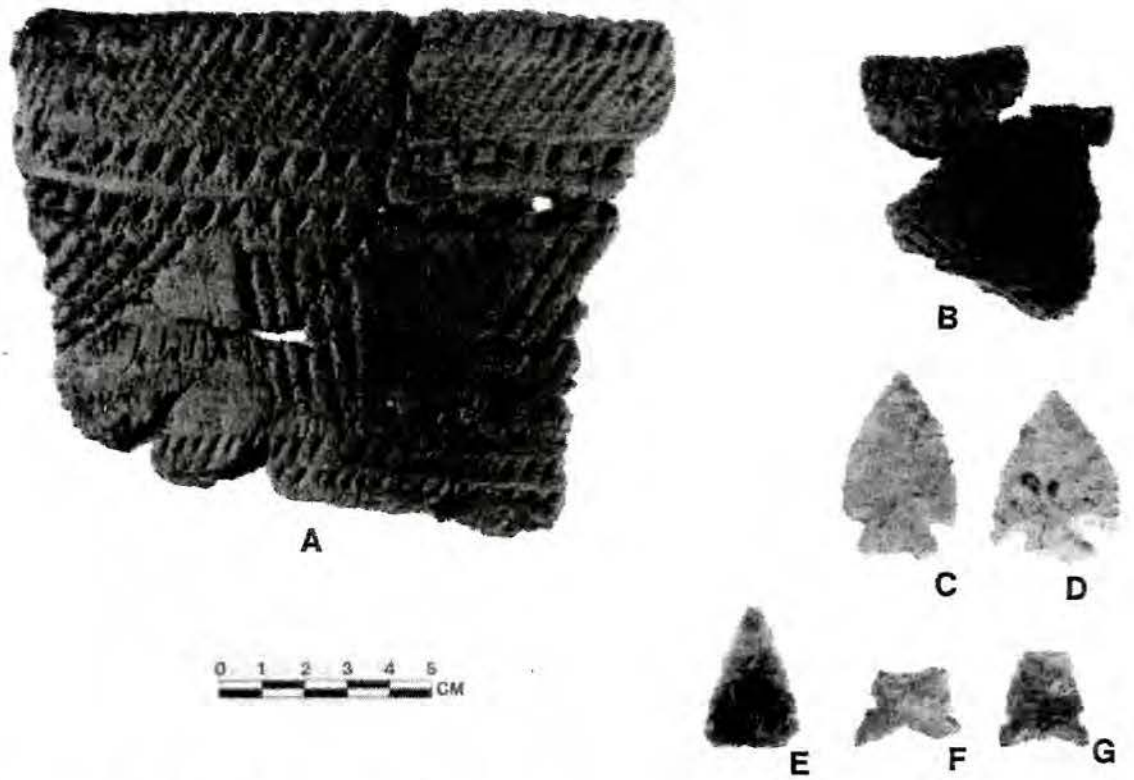

FIGURE 5.10: Late Middle Woodland Artifacts. A: Cord-Impressed Rimsherd, Ault Park; B: Dentate Rimsherd, Ault Park; C-D: Jack's Reef Corner-Notched Points, Van Bemmel; E: Levanna Point, Vogt; F-G: Port Maitland Points, Fitz.

Point Peninsula Complex

General

The Point Peninsula complex extends throughout south-central and eastern Ontario (Figure 5.4), passing into southern Quebec (Clermont and Chapdelaine 1982), western and northern New York (W. Ritchie 1944, 1969; W. Ritchie and Funk 1973), and northwestern Vermont (Power et al. 1980). A Point Peninsula rim sherd has been identified in Newfoundland (Penny 1981). Its northernmost border in Ontario can be drawn along the French and Mattawa rivers and Lake Nipissing, where Middle Woodland sites show a mixture of Laurel and Point Peninsula ceramic traits (J. Wright 1967b:111). On the west, the Grand River may serve, perhaps somewhat arbitrarily, as the Saugeen-Point Peninsula border, since there seems to be similar ambiguity about the taxonomic assignment of ceramics in the Niagara Peninsula and along the Grand River. Some investigators are inclined to identify material from the area as Point Peninsula, while others refer to it as Saugeen (Stothers 1976:46; J. Wright 1967b:119). To the east, Point Peninsula extends well into Quebec, possibly even into the Gaspe Peninsula (Barre 1975); the ceramics of Ault Park and Pointe-du-Buisson, not surprisingly, have a great deal in common. Although Point Peninsula of New York is also closely related, there are enough ceramic differences to suggest that Lake Ontario and the St. Lawrence River did impede interaction somewhat; pseudo-scallop shell decorated ceramics are relatively rare in New York, where corded stick motifs seem to have been more popular (J. Wright 1967b:120-123). Although Vinette 1 persists into post-Meadowood strata in New York (W. Ritchie and MacNeish 1949), it is not clear whether this reflects its continued manufacture or simply stratigraphic mixture.

Covering such a large area, Ontario Point Peninsula inevitably encompasses a considerable amount of variation. Nevertheless, some generalizations are possible. Ceramics are of the Vinette 2 series, coil constructed with conoidal or sub-conoidal bases, slightly everted to outflaring rims, and flat, rounded or pointed lips (Figure 5.11). Exterior surfaces are smoothed or brushed, while interiors are frequently "channelled", that is, modified with a "comb-like" implement that left broad, primarily horizontal striations in the clay. Most of the exterior is decorated, and occasionally a red ochre wash is added. Decoration is usually done with a dentate or pseudo-scallop shell stamp. The Vinette 2 ceramics differ from Saugeen in the more frequent occurrence of interior channelling, thinner vessel walls, finer paste, higher proportion of pointed lips, use of red ochre washes, and finer dentate (J. Wright 1967b; Finlayson 1977:630-631). Some of these differences, however, may actually reflect temporal variation within each complex (Stothers 1976).

Traits of the Point Peninsula bone and stone industries (Figure 5.11) are often shared with other complexes: barbed bone and antler harpoons, antler combs decorated with incised motifs, bone fishhook gorges, antler-hafted beaver incisors, and a wide variety of projectile point, celt and gorget forms. The most distinctive artifacts are often associated with burials and reflect Hopewellian influence, though these too appear in other complexes: panpipe covers of copper and silver, platform pipes, cut mica, pointed whetstones, copper ear ornaments, etc. (cf. W. Kenyon 1986). Large bifaces and exotic cherts from Ohio and Indiana are virtually absent, except in those Middlesex components that may have been the mortuary expression of early Middle Woodland groups.

J. Wright (1967b) has suggested that Point Peninsula and Saugeen show roughly the same ceramic trends. Pseudo-scallop shell is most frequent in the earlier sites, gradually giving way to dentate. Rocker stamping starts in low frequencies, increases in the middle part of the sequence, and drops off in the later sites. The changes in dragged stamp, a technique that involves impressing the implement and dragging it over the vessel surface in a repetitive manner, are less clear, since the technique has been incorporated into at least three ceramic types: Vinette Complex Dentate, Malcolm Push-Pull, and Rice Lake Banded. It seems to have been popular throughout the sequence, but increased slightly through time. Corded stick decoration is relatively late. There is some stratigraphic evidence for these trends in the middens of the Serpent Mounds and Cameron's Point sites (Johnston 1968a; Spence and Harper 1968).

As in Saugeen, the appearance of Hopewellian influences, among them burial mound construction, probably coincides with the shift in ceramic styles. The sherds in the fill of the Serpent Mound and Cameron's Point Mound C, fragments of vessels that had been discarded earlier and then incorporated in the mounds, include high proportions of pseudo-scallop shell. The mound construction was probably contemporary with the lower levels of the nearby middens, which show a decrease in pseudo-scallop shell. Hopewellian influences taper off about A.D. 200-250, though burial mounds apparently continued in some areas.

Sites

Brock Street (W. Kenyon and Cameron 1961)

This flexed burial of an adult male found in Peterborough has been placed in Late Point Peninsula (W. Ritchie 1969:236-237). The grave goods are two unilaterally barbed antler harpoons, two unilaterally barbed antler points, two antler flaking tools, two unmodified beaver incisors, an antler hafted beaver incisor with one end of the handle carved to form a set of sharp teeth, two disks that are probably made of human bone, one celt, two slate pendants, eight crude preforms, and eight stone points. Seven of the points are well-made, relatively narrow specimens with convex edges and side notches set well above straight to slightly convex bases (W. Kenyon and Cameron 1961: Pl. II:1-7). Although in most respects they correspond well to Ritchie's Long Bay type, the squared lateral basal edges are more like his Port Maitland type (W. Ritchie 1971b:125).

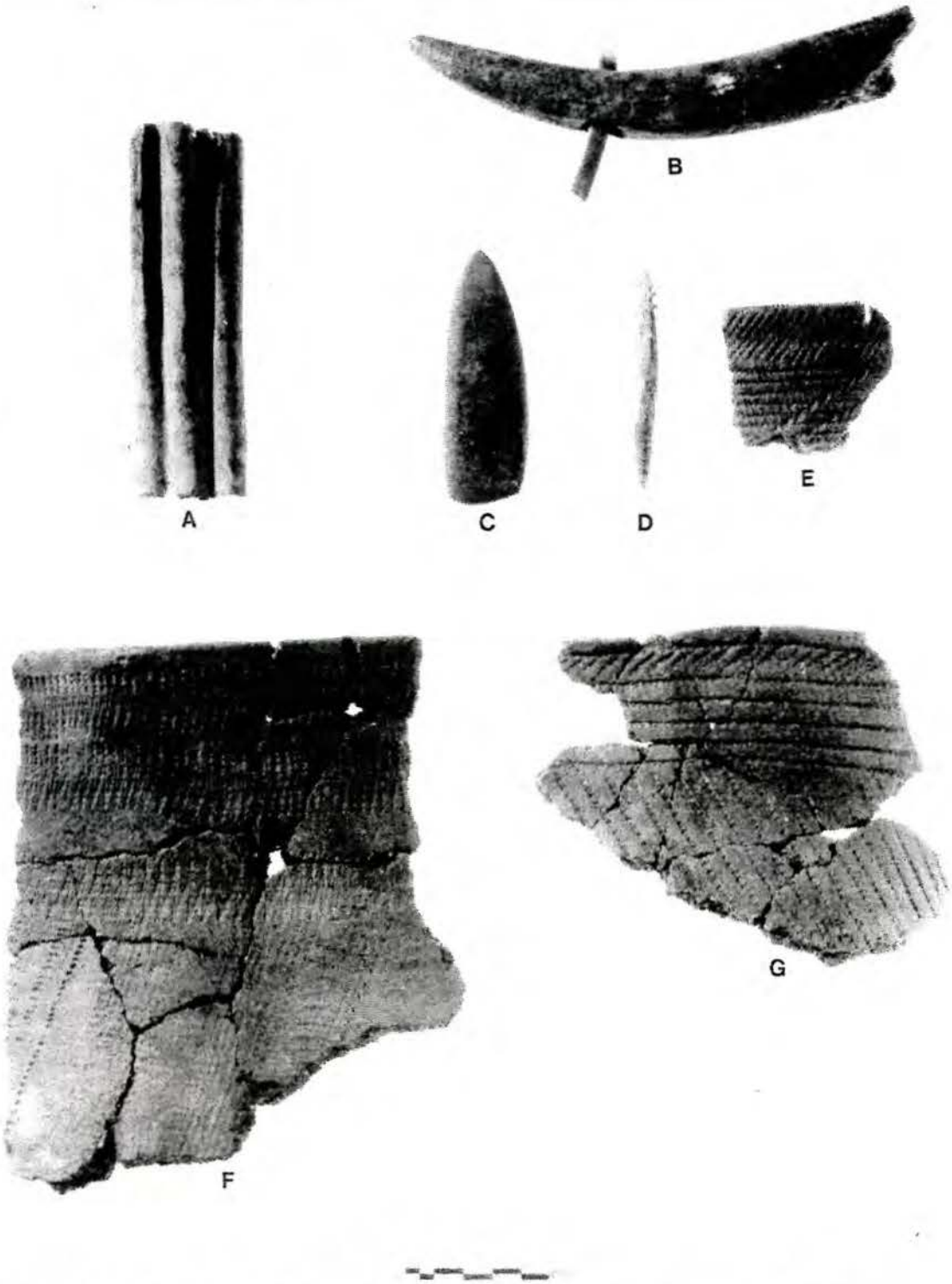

FIGURE 5.11: Point Peninsula Artifacts. A: Copper Panpipe Band, Le Vesconte Mound; B: Antler-Hafted Beaver Incisor, Le Vesconte Mound; C: Pointed Whetstone, See Mound; D: Barbed Bone Point, Serpent Mounds; E: Pseudo-Scallop Shell Rimsherd, Serpent Mounds; F: Rocker Stamped Dentate Rimsherd, Serpent Mounds; G: Complex Dentate Rimsherd, Serpent Mounds. Photo courtesy of Royal Ontario Museum.

Serpent Mounds (Boyle 1897; Montgomery 1910; Johnston 1968a; J. Anderson 1968)

On the north shore of Rice Lake, the Serpent Mounds site includes an extensive shell midden, an earlier habitation area, nine mounds, and some Late Woodland burials. The shell midden extends some 90 metres along the shore, and is up to 20 metres wide by .3 metres deep. It consists largely of mussel shell, with some artifacts and mammalian and fish bones. A radiocarbon date suggests its beginning about 70 B.C. ± 75. An earlier area of features and refuse lies along the shore to the west of the shell midden, but its full extent is unknown. Shell is relatively sparse there, the principal faunal material being mammal bone. One isolated adult female burial, without grave goods, was present. A cluster of postholes may represent a structure, but no particular form could be identified.

The nine mounds lie a little further inland, between the shell midden and the earlier habitation area. The Serpent Mound itself, Mound E, is vaguely serpentine in form, but Johnston (1968a:8, 20) is probably correct in suggesting that its irregular outline is merely the result of repeated additions to a smaller original mound. Only part of Mound E was excavated by Johnston, who recovered 28 individuals in undisturbed burials and parts of at least 46 more in disturbed contexts (J. Anderson 1968:2-7; Johnston 1968a:21-26). Some burials were in pits cut into the original ground surface, before the mound itself was raised, while others had either been placed in pits in the mound fill, as it was rising, or simply deposited on the mound surface to be covered with additional soil. There are two radiocarbon dates from the mound, A.D. 120 ± 200 and A.D. 290 ± 75.

Grave goods tend to occur more often with primary burials and in the pits below the mound floor. Most secondary burials were in the mound fill. Four individuals were apparently cremated *in situ* in the fill. A fifth cremation, an adult female, had been placed with an unburned male on the original ground surface. The male was accompanied by an offering. Grave goods from the mound include copper and silver beads, numerous beads and a pendant of marine shell, fossils and concretions, loon beaks, a double-bitted adze, and mandibles and maxillae of bear, wolf and mink.

Most of the other mounds were not so informative. Mounds G and I, however, proved to each cover a large pit filled with burials, largely adult and secondary. Mound G, which was not completely excavated, contained 20 individuals, while there were 42 in Mound I. No grave goods were found in either. The ceramics from the two structures, with high proportions of rocker stamping and relatively little pseudo-scallop shell, suggest a later temporal position than Mound E.

Cameron's Point (Boyle 1897; Spence and Harper 1968)

Cameron's Point lies on the Rice Lake shore some 10 kms east of Serpent Mounds. The site includes at least four mounds. The distribution of shell debris on the surface suggests midden deposits extending, probably somewhat discontinuously, about 300 metres along the shore and up to 18 metres inland (Spence and Harper 1968:6). Limited excavations in the midden revealed a dense layer of ash and shell, but no flotation was done and the faunal remains were not systematically analyzed.

Only one mound, Mound C, has been extensively investigated. The internal structure of the mound revealed the sequence of construction. Initially much of the original ground surface was scraped off and, at one point, a shallow trench was excavated. Then several burial pits were excavated in the prepared floor and some thin layers of primary fill were deposited. Fires were kindled in places on the primary fill layer and on the remaining ground surface. Finally the main body of the mound was raised. The absence of sod lines or other internal divisions, beyond the limited primary fill deposits, indicates that the construction of the mound was a single ongoing process, with no prolonged pauses in the work. It has been suggested that the event triggering the construction was the death of the community leader, probably the primary adult male with his offering of ritual and utilitarian items in sub-floor burial 37 (Spence and Harper 1968:31). There is a radiocarbon date of A.D. 100 ± 55 for the mound.

There were at least 37 individuals represented in the mound, 11 of them in 9 sub-floor pits and the rest in the fill. The fill burials had either been placed in pits in the fill or simply deposited on the surface, to be covered with

soil as the mound continued to grow. Three of the sub-floor individuals were primary burials and five more were partially articulated. Grave goods were present in five of the pits. The fill burials were all disarticulated and some were cremated. The only grave good in the fill was a fossil horn coral with a cremated adult. Among the sub-floor grave goods were a platform pipe, an iron pyrites fire-making kit, a bone pendant, parts of a bear femur, bone fishing barbs, shell disk beads, and mandibles of chipmunk, mink and weasel. Most interesting, though, is burial 24, a semi-articulated child. Although Spence and Harper (1968:21-22, 37) initially believed that the child had been placed on the original ground surface, reanalysis shows that it was in a shallow pit cut into the mound floor. With it were a necklace of 53 silver and 26 copper beads, another of 237 marine shell beads, a silver panpipe cover, a marine shell pendant, and five separate marine shell beads.

LeVesconte Mound (W. Kenyon 1986:24-40, Pls. 8-40)

LeVesconte is a single burial mound on a height of land overlooking Percy Reach, on the Trent River near Campbellford. There was probably a habitation component at the foot of the bluff, but the river has destroyed it. The remains of at least 61 individuals were recovered from the mound (J.E. Molto, personal communication). Most of these were at least partially disarticulated and some had been cremated.

The initial activity at the site was the excavation of pits. Offerings and bodies, or parts of bodies, were placed in the pits and on the original ground surface. As the overlying mound was raised, further burials and artifacts were placed on its surface and then covered with soil scraped from elsewhere on the mound (W. Kenyon 1986:27-29). It is not clear what period of time this took, but it is worth noting that at least six of the eight offering clusters were either on the original surface or in the two pits excavated into it. In this respect the mound is like the Serpent Mound and Cameron's Point Mound C, suggesting that it was raised in a relatively brief period, with the most important goods and people placed first. There are radiocarbon dates of A.D. 780, A.D. 230 and A.D. 120. The first is much too late but the other two give an acceptable mean of A.D. 175.

W. Kenyon (1986) provides detailed descriptions and illustrations of the grave goods. They include a remarkable series of bone and antler items, quite unparalleled in the other Rice Lake mounds: deer cannon-bone daggers, antler-hafted beaver incisors, bone and antler harpoons, deer and moose phalanges, and mandibles and maxillae of dog, muskrat and fox. Stone artifacts include celts, fossil horn corals, and pointed lozenge-shaped whetstones like those of the Donaldson 2 cemetery, the Cameron's Point midden, and the See Mound (W. Kenyon 1986:Pl. 8). More exotic goods include mica, a shark tooth, copper and marine shell beads and gorgets, and several unmodified marine shells. Of particular interest are nine panpipe covers, four of copper found with an elderly woman on the original surface and one of copper and four of silver found with two children in one of the sub-floor pits. Trace element analysis of the copper shows that it is from a source on the Keweenaw Peninsula, in northern Wisconsin. The copper of the Donaldson panpipes is from the same source (Sharon Goad: personal communication). The silver, on the other hand, is from a source in the Cobalt area of northern Ontario, as is the Cameron's Point panpipe cover. Also buried with the two children were bloom, raw silver, and some partially processed sheet silver, indicating that silver ore was carried here from the Cobalt area to be worked into sheet and artifact form.

Kant (Emerson 1955b)

The Kant site is located on Mud Lake within the Bonnechure River system in Renfrew County. Excavated in 1947, Emerson's efforts focussed on two areas, called the "point" and "ridge", which were spaced about 550 metres apart; most of the fieldwork, however, concentrated on the latter. Three separate areas of the ridge, which was located adjacent to the Mud Lake shoreline, were tested: the hillside hearth, south ridge and a burial area in between (Emerson 1955b: Fig. 2). A modest sample of 596 pieces of pottery was recovered from the excavations and related, using the New York typology (W. Ritchie and MacNeish 1949), to the Point Peninsula sequence (Emerson 1955b:51; Fig. 9). This was based on ceramic trends such as a high incidence of dragged dentate and pseudo-scallop shell stamped pottery compared to low amounts of rocker stamped pottery. Emerson also seriated the three habitation areas, noticing sizable decreases in dentate, pseudo-scallop shell and dragged dentate stamping and concomitant increases in rocker stamping and incised decoration in ceramic samples from the hillside hearth, the point, and the south ridge areas.

The burials, unfortunately, cannot be directly related to either of the Point Peninsula habitation areas from the ridge. Burial 1 consisted of a flexed individual in a grave in sand, with a red ochre sprinkling; it also contained an "extra" skull (Emerson 1955b: Fig. 4, Pl. II). Burial 2 was a burial of three individuals. The last burial was tightly flexed. Except for the red ochre, no artifacts were found with the burials to provide any clues to their cultural identity, and the presence of Archaic and Iroquoian artifacts from the site makes their Point Peninsula association somewhat uncertain.

Wyght (Watson 1980)

The Wyght site is located on the southeastern shoreline of Lower Rideau Lake, which drains to the Rideau and Cataraqui Rivers. In 1978 and 1979, Gordon Watson excavated a total of 179.5 sq. metres from four separate areas, but most of the fieldwork focused on Component A (98 sq. metres), located on the lower terrace, and Component C (57.5 sq. metres), located on the upper terrace. Detailed excavation techniques yielded horizontally and vertically controlled data on artifacts, features, calcined animal bones and carbon samples (Watson 1980).

Component A has nine features, of which six (Features 1-6) are hearths; the latter all contain charcoal, associated ceramics, and (except for Feature 6) sandstone slabs. Between Features 5 and 6 (Watson 1980: Fig. 6) is a sandstone bedrock slab with three ground depressions and an associated cobble maul. Feature 4 was a stone-lined pit adjacent to an area of charcoal, ceramics, calcined bone and round "boiling" stones. This feature yielded two dates of ca. A.D. 1100. Feature 7 is a concentration of chert, flint and quartzite with a central area of charcoal; all of the projectile points and most of the scrapers recovered from the site were found here. Feature 9 is a long, narrow area of ash and charcoal which Watson has interpreted as being a hide/fish drying rack (Watson 1980:31).

Component C had a rather sparse artifact distribution and only three features, one of which was a hearth. One of the others was a grouping of flat stones into a roughly circular arrangement which Watson has tentatively interpreted as being a small structure (or sweat lodge?; Watson 1980:35).

Ceramics dominated the artifact sample of 3297 specimens comprising 97.6% of the total; of this, 89.9% were found in Component A. Watson was able to sort the sherds into 100 vessels of which 27 were considered "major". Stylistically, the pottery related to all phases of the Point Peninsula culture. This was corroborated by an excellent series of radiocarbon dates (Table 5.1).

Watson demonstrated a linear relationship between depth of radiocarbon sample and age, and the resulting regression equation was used to compute an estimated age for each of the 27 "major" vessels. From this, he has established a temporal sequence which is divided into three stylistic groups (Watson 1980:120-121):

1) the earliest group of ceramics has a mean date of about A.D. 32 and is similar to Vinette Dentate and Vinette Complex Dentate types of New York and Vermont.

2) the middle group has a mean date of about A.D. 362 and is dominated by pseudo-scallop shell decorated ceramics.

3) finally, the last group has a mean date of about A.D. 600, and several styles are present: simple trailed or incised irregular criss-cross bodies, or cord-wrapped stick or dentate impressed decorations. This has resemblances to the Owasco series in New York.

Watson's technique is controversial in that it makes general assumptions about cultural formation and post-depositional processes. Nonetheless, the results do seem to corroborate the general sequence that was long ago established by W. Ritchie and MacNeish for New York (1949) based on samples excavated from stratigraphic deposits.

The Wyght site is interpreted to be a seasonal campsite which was occupied repeatedly between 500 B.C. and A.D. 1120. The limited faunal sample indicates that at least deer, beaver and otter were taken. Numerous fish species were also represented in small amounts, including black crappie, brown bullhead, yellow perch, white sucker and pike. No absolute indication of seasonality, however, could be obtained from either the floral or faunal remains.

Ault Park (Emerson 1956c, 1958; Finlayson 1969; R. Pihl n.d.b; J. Wright 1956a, 1956b, 1967b)

The Ault Park site was discovered in 1947 during a survey of the north shore of the St. Lawrence River in preparation for construction of the St. Lawrence Seaway (Leechman and DeLaguna 1949b). It was located on Sheek Island on the southwestern point overlooking the Long Sault Rapids and directly opposite the Long Sault site in New York. Excavation of the site, however, did not commence until 1956, and proceeded until July 1, 1958, when the site and most of Sheek Island were flooded.

Because the site was known to be large, Emerson adopted a testing programme that sampled as many areas of the site as possible; consequently, a series of ten trenches or units were excavated within the main habitation area, along the bluffs overlooking the river, and towards the interior. In total, 479 five foot squares were excavated (or .275 acres) over the 1956 and 1957 field seasons. In addition, a large area was mechanically stripped by bulldozer in order to more fully investigate the site's settlement pattern. In this way, a total site size of approximately fifteen acres was estimated.

The site is multi-component, with Middle Archaic, Laurentian Archaic, Meadowood, Point Peninsula, Pickering, and St. Lawrence Iroquois occupations; of these, however, the dominant component is Point Peninsula. The large sample of over four hundred vessels is dominated by pseudo-scallop shell, dentate, dragged dentate and rocker stamped pottery. This material was generally found all over the site, but it was the stylistic majority within the main habitation area (Trench 1 complex and Trench 6) and in the cemetery (Trench 3). There is, however, a sizable sample of cord-wrapped stick impressed (or stamped) pottery which is also distributed across the excavated area of the site. The two radiocarbon dates of 445 ± 80 B.C. and 470 ± 70 B.C. came from features with associated plain and pseudo-scallop shell stamped pottery.

Although the excavation recording techniques varied widely from unit to unit and from year to year, and consequently a fair amount of information is either missing or confusing, it has been possible to reconstruct much of the settlement and burial patterns that existed, within both the excavated and bulldozed portions of the site. Dozens of hearths, pits, and isolated burials were encountered, and two cemeteries were identified, one of which (Trench 3) was almost completely excavated.

Cremation burial was quite common but, because of the acidic soil, flexed and bundle burials may have been obliterated. This destruction seems likely because of a number of "empty" burials marked only by red ochre staining; red ochre in nodule and powdered form was common in the extant graves. While grave goods were frequently included with the interments, they were not abundant in individual or collective numbers; rarely the graves would have more than one or two objects, such as side-notched and corner-notched projectile points, side-notched asymmetrical knives, chunks of quartzite or graphite nodules, ground stone fragments or abraders, etc. Only one grave, from Trench 3, produced a cache of objects, but this is believed to be a probable Meadowood grave. Present in both cemeteries are small circular hearths (or smudge pits) which were filled with black soot and little else. Since these are directly associated with the graves, they are interpreted to be part of the burial programme. Similar features were observed by W. Ritchie at Oberlander 2 (1944). J. Wright believes that the majority of the burial traits observed at Ault Park are survivals of the Meadowood burial complex. Whether it could be argued that the cemeteries are predominantly Early Woodland, however, is another matter. A large quantity of Point Peninsula cultural debris is stratigraphically above but *not* associated with the burials located in Trench 3, but there is very little Vinette 1 pottery to be found in the area. It should be noted that most of the projectile points and assymetrical knives found as grave goods are probably of Middle Woodland origin.

Interpretations

The most fully reported Point Peninsula material is from what has been termed the Rice Lake phase, the A.D. 0-200 period of Hopewellian influence in the Rice Lake-Trent River area (Johnston 1968b:29). However, there are still a number of problems, the most serious being the lack of good floral and faunal analyses. A settlement-subsistence system has been outlined (Spence et al. 1984), but in the absence of solid data it remains only educated guesswork. It suggests large macroband sites on the lakeshore in the spring, summer and fall, with an early emphasis on fish and shellfish giving way, in the fall, to the exploitation of wild rice, deer and nuts. In late fall the macroband settlement dispersed, the constituent microbands moving into the interior to winter on stored foods and the occasional deer. However, the occupants of brief Point Peninsula camps at Dawson Creek emphasized deer hunting and were apparently not very concerned about nut collection, suggesting that the reconstructed subsistence system is somewhat oversimplified (Jackson 1983c:93, 1988:92-93).

The social reconstruction is more firmly based, but must still be treated with caution (Spence et al. 1984; Spence 1986:90-91). Mound construction was probably triggered by the death of the community leader. Thus each mound, or each addition to an existing mound (as in the case of the Serpent Mound), probably represents the accumulated dead of a generation or so. It is possible that, after the initial burials in the sub-floor pits, further individuals were added in the fill as they died, raising the mound slowly over years or decades until the death of the next leader started a new mound. However, the high proportion of secondary burials in the fill and the absence of structural lines suggest that, more likely, bodies were placed in a primary burial elsewhere at the time of death, to be exhumed and reburied in the mound when it was being constructed. The relatively large skeletal series from the major mounds suggest large bands, perhaps a hundred or more individuals each, given a crude annual death rate of 3.4%.

There is also some question about the social identities of the individuals in the sub-mound graves. Males, females and subadults are all represented, but it is not clear whether they were afforded this special treatment because they were close kin of the deceased leader, or merely because their deaths were close in time to the leader's death (Spence 1986:91). The presence of incipient or full Os Inca in three of the sub-floor Serpent Mound burials with grave goods suggests a close biological relationship among these individuals, and indicates that status was inherited to some degree. Differences in the incidences of osteological traits between fill and sub-floor burials in Cameron's Point Mound C suggest a social dichotomy between the two categories. This could best be explained by a low-level ranking system, one in which status was based in part on descent, as well as on personal characteristics and achievements.

If a rank system of sorts did exist there is the further question of what role, if any, Hopewellian influences played in its genesis and maintenance. Cobalt silver processed through LeVesconte supplied the other Rice Lake communities and was also traded to Hopewell-related groups in New York, Ohio, Georgia, and elsewhere. Some of the copper panpipes, marine shell items, and other exotic goods in the Ontario mounds were undoubtedly reflexes of this trade. There may also have been a linked exchange of more utilitarian commodities like northern furs and New York Onondaga chert (Spence et al. 1979). The linkage of these two forms of exchange, anchored in a limited set of trade partnerships, may have been responsible for shifting the Rice Lake societies from egalitarian bands to simple ranking systems (Spence 1982). The effect of Hopewellian influences, then, was not the introduction of a new ideology of power or social distance. Rather, it was a change in economic relationships between neighbouring societies that unbalanced the previous system, allowing some individuals who controlled the flow of goods to enhance their status and pass it on, in part, to their descendants.

There may have been still other changes at this time. The increased size and greater sedentism of the Rice Lake societies may have led to a more formal band structure. Osteological data suggest a preference for patrilocal post-marital residence (Spence et al. 1984; Spence 1986:90). If so, the relatively open recruitment practiced by Meadowood bands had given way, at least at this place and time, to a system that defined access to band resources somewhat more narrowly.

We can say very little about the Rice Lake societies before the appearance of the mounds and shell middens. The early habitation areas at the Serpent Mounds site indicate an economy less focussed on shellfish exploitation (Johnston 1968a:35-39). The isolated burial there, and those at the Scott site near Campbellford on the Trent River (Helmuth 1972), lack grave goods but may represent this early (300 B.C. - A.D. 0) part of the Middle Woodland period.

Post-Hopewellian developments in the area are also poorly understood. Mounds G and I of the Serpent Mounds site, and one of the Preston mounds, may date to this post-A.D. 250 period. The ceramics in the fill of G and I indicate a post-Serpent Mound position in the site sequence. The numbers of individuals interred in each mound suggest that band size remained large, but clearly status distinctions had not persisted, or at least were no longer expressed in the mortuary programme. The upper levels of the Serpent Mounds shell midden may also fall in this period. If so, shellfish exploitation remained an important part of the subsistence system.

The upper ash level of the Cameron's Point midden and the ash level of East Sugar Island are probably quite late in the Middle Woodland sequence, in the A.D. 500-700 span (Spence and Harper 1968; W. Ritchie 1949a). Cord-wrapped stick decorated ceramics are present, and there are two Port Maitland points in the East Sugar Island ash stratum (W. Ritchie 1949a: Fig. 3u-v). The relative paucity of shell debris in these levels suggests a significant shift in subsistence practices. The presence of maize in a Dawson Creek feature dated to A.D. 545 raises the possibility that local societies may have been adopting maize horticulture at this time, though the presence of a Late Woodland rimsherd in the same feature casts some doubt on the association (Jackson 1988:29-30, 34-35). Probably maize did not enter the region until the subsequent Princess Point occupation. The Buttar site, a small aceramic camp, points to the persistence of a long established pattern of inland winter hunting by small male task groups (Jackson 1987). A hearth there produced a Jack's Reef Corner-Notched point and a radiocarbon date of 1020 ± 110 B.P. (S-2748), or A.D. 930. The date is somewhat too late, though the earlier part of its range at two standard deviations would be acceptable.

Local burial practices may have changed at this time. The non-mound Brock Street Burial probably dates to this A.D. 500-700 span. A number of mounds at the Serpent Mounds, Miller and Preston sites contain fewer burials and few or no grave goods (Boyle 1897; Johnston 1968b). These may also represent later Middle Woodland societies, though some may be contemporaries of the major mounds described above. To judge by their artifact contents, osteological traits, and a radiocarbon date of A.D. 60, the Prince and Princess mounds on East Sugar Island are probably of the same period as Mound E of the Serpent Mounds site (Boyle 1897; Stothers 1974b; Spence et al. 1984:127-128). However, there were only five individuals in the Prince Mound and eight in the Princess Mound (where the principal burial was, incidentally, a male), suggesting that the bands they represent may have been relatively small. We really can say very little with confidence about many of the Rice Lake sites. Long's 1896 trenching of Mound C at Cameron's Point, for example, would have left us with a very distorted view of the structure, had not J. Russell Harper conducted a thorough excavation in 1952. As a further cautionary note, Boyle apparently thought that any burial above a mound floor was intrusive, though we now realize the majority of band members would have been buried in such a location.

Published data on Point Peninsula from elsewhere in southern Ontario is less comprehensive. In eastern Ontario some of the Middlesex components may well represent the mortuary programme of early Point Peninsula bands, though in the absence of clear evidence to that effect we have chosen, for the present, to treat Middlesex as a separate complex. Radiocarbon dates and a high proportion of pseudo-scallop shell rims suggest that the probable burials of the Deep River site, on the upper Ottawa River, are also early in the Middle Woodland period (Mitchell 1966). The burials of the Kant site, in the same region, are of uncertain date. They are equidistant between two occupation areas of the site that, to judge by their ceramics, are temporally quite distinct (Emerson 1955b). As noted earlier, the later radiocarbon dates of the Wyght site are apparently associated with dentate stamped, trailed or incised, and cord-wrapped stick decorated ceramics (Watson 1980). Varying amounts of cord-wrapped stick decoration seems to characterize late Middle Woodland occupations in eastern and south-central Ontario, like the Malcolm site (Dailey and Wright 1955), while in the Saugeen complex dentate stamped pottery persists without such additions, at least in the Lake Huron area, to A.D. 700 or later (Finlayson 1977:586-589).

Mounds are scattered in other parts of southern Ontario, but generally contain few burials or artifacts of diagnostic value. The Moira River valley, just east of the Trent River, has a number of Point Peninsula sites and some possible mounds (Barber 1976; Daeschel 1987). Although some of the mounds appear to be artificial, no evidence of burials has been found. There are also a number in the Bay of Quinte, largely of stone and frequently without burials (Wallbridge 1860). One of these on Massassauga Point, excavated by W. Ritchie (1949b, and personal communication), produced the bodies of an adult female and infant, with a Vinette 2 sherd among the bones. Another, excavated much earlier by Wallbridge (1860), contained a multiple burial with a variety of grave goods, including a unilaterally barbed point, a bone awl, tubular beads of conch *columella*, and an incised antler comb (W. Ritchie 1944:178, Pl. 87 no. 5). The offering is characteristic of late Middle Woodland, suggesting that at least some of the Bay of Quinte mounds may date to this A.D. 500-700 span.

The Yellow Point Mound, one of a small cluster near St. Catharines, contained only a few burials, some mica, two projectile points, a gorget, a netsinker, and a couple of other items (Boyle 1902). A mound at Dundurn Castle in Hamilton, opened in 1839, produced a burial, mica, a gorget, and some celts (Fox 1985a). The presence of mica in both mounds and some Middle Woodland sherds at Dundurn Castle indicate that the mounds are Middle Woodland, perhaps from the A.D. 0-200 period when mica was frequently placed with burials. The Lewiston Mound, in the nearby Niagara area of New York, produced some Cobalt silver, a Snyders point of Flint Ridge chert, a few other items, and a radiocarbon date of A.D. 160 ± 80 (Y-1276). If these Niagara area mounds were indeed contemporaneous with those of Rice Lake, and were built at the death of the band leader, the bands in this part of Ontario must have been smaller and more egalitarian than those of Rice Lake. It is, of course, possible that only a selected segment of the population was interred in the mounds. However, other than the labour involved in mound construction, there is no evidence that any of the burials enjoyed a particular status.

Conclusions

Terminal Archaic and Early Woodland

Most parts of southern Ontario were occupied in the Terminal Archaic period, and probably had been since at least late Archaic times (cf. Ellis et al., this volume; A. Roberts 1985). Archaeological and osteological data suggest bands of 35-50 people following an annual settlement-subsistence round within a defined territory, splitting into microbands and recombining as seasonal conditions dictated. Recruitment was open, with no preferred post-marital residential practice restricting band affiliation. These were probably egalitarian societies in which status was based on age, sex and personal achievements.

However, some new elements enter the archaeological record during the Terminal Archaic period. There is widespread exchange of exotic materials like copper and marine shell, largely in the form of non-utilitarian items. Cemeteries, areas reserved exclusively for the disposal of the dead, appear. The bodies of those who had died over the preceding year were preserved, sometimes through cremation, until the band was scheduled to gather again in the vicinity of the cemetery. At that time they were buried together, often with offerings of exotic materials. Some caches of artifacts may have been placed apart from the burials, perhaps representing communal offerings by the group as a whole (cf. Charles and Buikstra 1983:133).

The significance of these new elements is not entirely clear. Cemeteries have generally been viewed as the expression of a corporate group's claim to a territory or a particular set of resources, a claim phrased in terms of ancestrally derived rights and long-term priority in the area (Saxe 1970; R. Chapman 1981). Their presence, then, is interpreted as a consequence of competition over resources among well-defined and relatively sedentary corporate groups brought about by population increases. Associated habitation sites are marked by substantial midden deposits and structures (Charles and Buikstra 1983; J. Brown 1985). The long distance movement of exotic goods is seen as linked to a parallel exchange of more mundane materials, like high quality chert or even foodstuffs, to which access had become restricted as bands occupied progressively smaller and more rigidly defined territories (Brose 1979; Loring 1985a). These practices were the result of "packing", the filling of an area as bands continually expand and fission to create additional groups (J. Brown 1985).

However, the Terminal Archaic and Early Woodland occupations of southern Ontario do not entirely conform to this model. Population growth probably did occur over this time span, but it is difficult to measure and certainly was not great. Early Woodland sites are more common than Terminal Archaic ones, through to some degree this may be an effect of the greater visibility afforded Meadowood sites by their distinctive lithic assemblages and Vinette 1 pottery. If we assume that cremation served primarily to preserve for later burial the bodies of those who died at some distance from the band cemetery, its decreasing incidence in Meadowood may suggest that territories were contracting somewhat as a response to moderate population growth. As noted above, though, the role of cremation in Early Woodland societies is far from clear.

Nowhere is there evidence of a population increase large enough to have caused inter-band competition for resources. Though a number of Meadowood habitation sites have been identified, none show substantial structures, lengthy occupation, or deep or extensive middens (but note Ellis et al. 1988). Bands apparently remained mobile and macroband aggregations, when they occurred, were not prolonged. Subsistence systems were diversified, like those of the Archaic.

The appearance of cemeteries, then, suggests the presence of other factors. Competition for resources may still have played some role, but only in particular circumstances. New bands were probably created by fission through the small but constant population growth that we believe characterized this period. Their social heritage would have given them the same rights over local resources that the parental band enjoyed. To avoid resource depletion or social tension, resources and territories may have become more carefully defined than previously. This would force newly emergent bands to establish themselves a little further afield, thereby maintaining a regional population distribution well matched to the distribution of resources.

Band cemeteries would have played a role in this, but it was probably the mortuary rituals performed in them rather than the cemeteries themselves that were important. The audience for these rituals would have consisted not of outsiders with an acquisitive eye on band resources, but rather of those who already had some quasi-legitimate claim to them (Spence 1986; W. Kenyon 1986:73-74): those who had already been exploiting the resources and cooperating together; those who had recently separated from the band but still maintained some claim over its resources by virtue of their heritage; and those who might elect to become members under the rather flexible recruitment rules that prevailed. For all of these interested parties, the communal rituals that took place annually at the cemetery would have served to present claims, redefine group membership, and make explicit the responsibilities and rights of the participants.

A variety of pressures would have made an annual ceremony necessary, even for those who already enjoyed access to the band resources. Death, which always requires some redefinition of roles and relationships, would have been especially disruptive in small groups like these. Furthermore, band members were not in continuous or even frequent contact over the year, so there would have been a need to periodically reaffirm, or redefine, relationships and rights. Mortuary rituals, focussed on the event that most fundamentally transformed relationships within the band, would have provided the ideal venue for this.

Middle Woodland

Band size may have remained roughly the same in most parts of southern Ontario. However, the packing effect continued. Middle Woodland sites are noticeably more common than Meadowood ones. Although this may partially reflect the longer time span of Middle Woodland, and the greater durability and broader functions of Middle Woodland ceramics, population increases must still have been significant. Also at this time, the southwestern-most part of Ontario became more culturally distinguishable from the rest of the province.

There were also some major changes in the settlement-subsistence system. Large sites with structures and substantial middens appear, usually spring macroband occupations focussed on the intensive exploitation of spawning fish. Part of the catch was probably preserved for later consumption, thus expanding food supplies for periods of scarcity like mid-winter. This could have accelerated population growth in the region.

The large size of these spring-summer sites does not reflect increased band size so much as a prolonged period of macroband settlement and a more consistent return to the same site. As particular locations, especially by rapids where spawning fish could be taken in quantity, became more crucial to band subsistence, they may have had a stabilizing effect on the settlement cycle. Also, the contraction of band territories through packing would have led to more sedentary settlement (J. Brown 1985). Defense of these crucial locales against outside intrusion would have become more important. Even now, though, the external threat would not have come from strangers newly arrived on the scene. Rather, it would have involved neighbouring bands already related through affinal and other ties, and perhaps even having some legitimate claim to the resources by virtue of these ties. Thus, mortuary rituals may have served again as the arena in which such claims were presented and evaluated.

The situation in the Rice Lake area may have been more complex (Spence et al. 1979, 1984; Spence 1986). Macrobands there, intensively exploiting several resources, were larger than usual, and the major macroband camps on the lakeshore may have persisted through half the year or more. Their larger size and decreased mobility would have led to the development of institutions involved in conflict resolution and the allocation of resources (J. Brown and Price 1985:438). These would have been oriented both internally, as before, and toward an increasing danger of challenge from neighbouring bands as packing reached its limit in the area. The burial mounds, on promontories overlooking the water, would have been highly visible expressions of territorial claims. Charles and Buikstra (1983:130) suggest that the appearance of bluff-top mounds in the Illinois Valley "is indicative of increased competition among neighbouring economic units".

In the Rice Lake area these conditions may have encouraged the development of low-level ranking and more formal guidelines for group membership, based on a patrilocal post-marital residential preference and some degree of descent reckoning. The community-wide mortuary ceremonies that previously allowed an annual review of band composition and resource allocation were now conducted only every decade or two, suggesting that the local groups had now become more formal and durable. These features, however, cannot be explained solely as responses to the intensive exploitation of a favourable environment and growing band size. The circulation of goods, both exotic and mundane, through a widespread exchange network was also an important factor. After the disintegration of this network, about A.D. 200-250, large groups with similar subsistence systems persisted in the area, but ranking appears to have ceased.

A number of sites probably fell late in the Middle Woodland period, ca. A.D. 500-700. Certainly, occupation persisted in some of the large spring-summer macroband sites like Donaldson, Serpent Mounds, and Ault Park. However, the repeated use of these sites over centuries and stratigraphic compression have made it very difficult to isolate particular occupation episodes (Finlayson 1977:596). Small, special purpose sites may be more readily identifiable, like the Fitz site and the Port Maitland and Brock Street burial components. These, however, give us a rather narrowly focussed view of developments in this crucial time span. A special effort must be made to define subsistence and settlement practices over the full annual round. It was in this context, after all, that the prehistoric inhabitants of Ontario apparently took the first tentative steps that ultimately culminated in the development of the fully agricultural Late Woodland societies of the province.

Continuity and Ethnicity

There seems to have been cultural continuity from Archaic into Meadowood across the province, and Jackson's (1980, 1986b) evidence at Dawson Creek further suggests that Meadowood developed into Point Peninsula in south central Ontario. Both cultural and biological data indicate continuity from Point Peninsula into the Ontario Iroquois (S. Smith 1987; J. Anderson 1968; Molto 1983; J. Wright 1984).

In southwesternmost Ontario, the Couture complex ceramics probably evolved from the earlier Vinette 1 and Pinery wares. Although the assignment of ethnicity to archaeological materials is inevitably uncertain, the ties between the Couture complex and the later Western Basin materials of Michigan and the southwestern corner of Ontario (see Murphy and Ferris, this volume) suggest that Couture may have been basically Algonquian, ancestral to one or more of the Central Algonquian groups of Michigan, Ohio, or Indiana.

The ethnic identification of the Saugeen complex people, on the other hand, remains an open question. It is even possible, given its wide distribution and variability, that Saugeen contributed to both the Iroquoian and Algonquian historic populations of the region.

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CHAPTER 6

THE MIDDLE WOODLAND TO LATE WOODLAND TRANSITION

William A. Fox

Introduction

To varying degrees, the ca. A.D. 600 to 900 period of prehistory was transitional in both a technical and social sense for the ethnically diverse Native populations of southern Ontario. Developments within this time frame laid the basis for the emergence in some areas of a settled village - agricultural based lifeway by ca. A.D. 900. Yet, outside of the Princess Point complex in the Grand River - Hamilton area (Stothers 1977), this period is poorly documented and understood in southern Ontario.

After briefly reviewing how the term "Late Woodland" has been defined, the Princess Point complex will be summarized in detail and developments in other areas contemporary with Princess Point will be discussed. The focus will be on developments in southcentral to southeastern Ontario, as materials from southwesternmost Ontario are discussed in detail in a separate chapter (Murphy and Ferris: this volume).

Definitions of Late Woodland

Archaeologists have identified three Middle Woodland complexes in southern Ontario dating prior to A.D. 700 (Spence and Fox 1986, Spence et al.: this volume). Ceramic stylistic attributes and to a lesser extent lithic tool and mortuary practice variations, have been used to define the Couture, Saugeen and Point Peninsula cultures. However, the spatial distribution of these, when combined with Late Woodland period evidence and historic era documentation argues against a simplistic correlation between these archaeological constructs and linguistic groupings such as Central Algonquian, Iroquoian and Northern Algonquian (Spence et al.: this volume).

Subsequent chapters dealing with Late Woodland complexes, however, apply traditional archaeological assumptions as to an Iroquoian ethnic identity of much of this material (Smith: this volume), or present new archaeological evidence to argue for non-traditional Central Algonquian identifications in southwesternmost Ontario (Murphy and Ferris: this volume). Also, there can be no doubt that a number of Northern Algonquian speaking groups inhabited the northern margins of southern Ontario during the early seventeenth century (Heidenreich 1988; Fox 1989a and this volume) and that this situation has some time depth.

The existence of three ethno-linguistic groupings in southern Ontario during historic times has particular relevance to an understanding of the differing concepts employed by researchers to delineate the Middle from the Late Woodland period. W. Ritchie (1980), working in the Five Nations Iroquois territory of upstate New York state observes that there is a continuity and gradual change in material culture from the Middle to Late Woodland complexes and states of the Late Woodland that "developments of greatest import during this period, from c. A.D. 1000 through contact, were the practice of maize horticulture and the appearance of large settlements, concomitant with accelerated population growth" (W. Ritchie and Funk 1973:165). This subsistence based socio-cultural definition appears accurate for Iroquoian peoples, but is progressively less applicable to Central and Northern Algonquian groups, based on extant ethnohistoric information. Central Algonquian groups, such as the ethnographically docu-

mented Sauk, Fox and Kickapoo display a lesser dependence on corn-based agriculture and a less sedentary settlement pattern than Iroquoian groups, while the mobility and largely hunting/gathering subsistence economy of the Northern Algonquian groups is well attested (e.g. Trigger, editor, 1978; see also Murphy and Ferris: this volume; Heidenreich: this volume).

Other researchers working in Central and Northern Algonquian culture areas have tended to define the Middle to Late Woodland transition more on the basis of material culture, primarily ceramics (see below), rather than on changes in subsistence, settlement and community patterns, and by inference, social structure, and would place this transition between ca. A.D. 500-800. When socio-cultural evidence beyond artifact style preference is considered by these scholars, it is often only in terms of the demise of Hopewellian influence (Griffin 1983:271-276). Indeed, Mason (1981:296) comments that the "Late Woodland period has been defined as much by the disappearance of specifically Middle Woodland, especially Hopewellian, traits as by the emergence and dissemination of new ones." Considering the divergent paths in socio-cultural adaptation chosen by the Central and Northern Algonquian and Iroquoian peoples, the aforementioned diversity of archaeological definitions for the Late Woodland period is understandable. At the present time one will find a number of divergent definitions used, depending upon the different criteria emphasized. These varying definitions are summarized in the following sections.

Material Culture Definitions

Those who define the beginning of Late Woodland on artifactual grounds argue it can be defined on the basis of changes in technical and stylistic ceramic vessel attributes. Coil construction is replaced by the paddled vessel production technique wherein vessels are formed from a large initial clay mass rather than a thin coil. Vessel body form changes from elongated with a conical (cone-shaped) base to a more globular form. Cord impressions, notably the use of a "cord-wrapped stick" (see below), supplant simple and dentate tool impression decorative techniques among some groups. Using these ceramic criteria, the beginning of the Late Woodland period in Ontario has been radio-carbon dated in many areas to around the seventh century A.D. such as in southwestern Ontario and the Lake Huron-Georgian Bay littoral zone (Fox 1982f; Conway and Molto 1988). Yet, there are some later dates to the thirteenth century A.D. in northern Ontario on dentate-stamped, Laurel Middle Woodland ceramics (Hamilton 1988; C. Reid and Rajnovich: in press) which suggests the transition to cord-wrapped stick ceramics occurred much later in some areas. Definitions of the Late Woodland using other artifact criteria could include a switch to the use of small triangular projectile points, an almost total dependence on local toolstone sources, a decreasing use of "ornamental" ground stone artifacts such as gorgets, an increasing use of "bent-elbow" forms of ceramic pipes, and the decreased use of Native copper. These changes all seem to have occurred some time in the ca. A.D. 600 to 800 period but a more precise dating is precluded with present evidence.

Mortuary Definitions

Mason (1981:296) observes that "in general, the Late Woodland cultures demonstrate a lessened attention to elaborate mortuary ritual, at least as they were expressed in lavish grave furnishings. The contrast between high-status burials with abundant and often exotic appurtenances and the simple graves of the great majority, itself largely restricted to the Hopewell cultures, virtually vanishes in the Late Woodland sites." The Kipp Island Phase of Point Peninsula in New York as defined by W. Ritchie (1980) appears to date ca. A.D. 500-750 and is characterized by a mortuary complex including grave goods such as unilaterally barbed harpoons and combs of antler, antler hafted beaver incisor tools, whelk columella, marginella and olivella shell beads, ground slate single hole pendants, steatite platform pipes and Jack's Reef and Port Maitland style notched chert bifaces (W. Ritchie 1971a, 1980:235; see Spence et al.: this volume). Similar relatively elaborate burials also occur in southwestern Ontario, such as at the Williams (see Murphy and Ferris: this volume; W. Ritchie 1980:236) and Port Maitland (Spence et al.: this volume) sites, as well as in adjacent Michigan and Ohio [the "early Late Woodland" Wayne Mortuary complex of Halsey (1976)]. These burials appear to date as late as ca. A.D. 800. Overall therefore, if the beginning of the Late Woodland is defined on the basis of a mortuary tradition virtually devoid of elaborate and, at times, exotic grave goods (Mason 1981), then the Middle Woodland cannot be seen to end in southern Ontario and adjacent areas until the eighth century A.D., at the earliest.

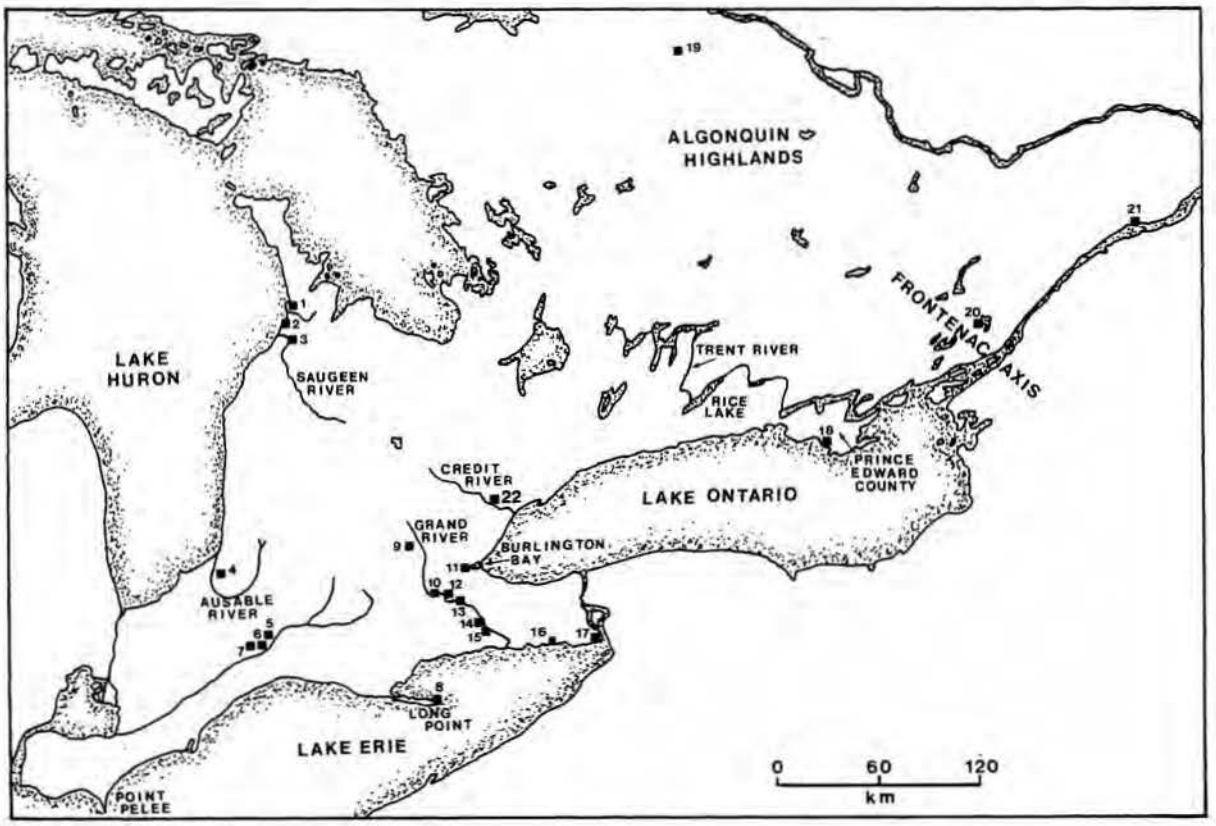

FIGURE 6.1: Location of Sites Referenced in Text. 1: Chief's Point; 2: Hunter; 3: Donaldson; 4: Simons; 5: Neeb; 6: AfHj-35; 7: AfHj-40; 8: Varden; 9: Monarch Knoll; 10: Mohawk Chapel; 11: Princess Point; 12: Glass; 13: Middleport; 14: Grand Banks; 15: Cayuga Bridge; 16: Ansari; 17: Surma and Orchid; 18: Lakeshore Lodge; 19: Radiant Lake 3; 20: Jackson's Point; 21: Ault Park; 22: Maracle.

Settlement Definitions

Using W. Ritchie and Funk's (1973) Late Woodland period definition based on corn horticulture and village settlements, the tenth century Porteous village near Brantford, Ontario (Noble and Kenyon 1972; Stothers 1977) is the earliest Late Woodland site in Ontario and the earliest site of the Early Ontario Iroquoian Tradition (Smith: this volume; Williamson: this volume). To the west, the earliest Western Basin Tradition villages yet identified in Ontario are the eleventh century Dymock sites (Fox 1982a; but see Murphy and Ferris: this volume, for a differing view of these sites) while to the east in the Algonquin Highlands and Frontenac Axis of the Canadian Shield (L. Chapman and Putnam 1984; see Figure 6.1), no villages have been identified in these regions which were probably occupied by Northern Algonquian bands. The Northern Algonquian adoption of a village based settlement pattern is currently a subject of considerable interest and debate (Fox: this volume).

In summary, therefore, depending on the characteristics one wants to emphasize, the beginning of the Late Woodland can be seen to begin anywhere from ca. A.D. 700 to post-A.D. 1000.

Princess Point Complex

The Princess Point Complex is so named after the type site in Coote's Paradise, just west of Burlington Bay (Figure 6.1). Stothers' (1977) description of the Princess Point Complex, which he regarded as Late Woodland, still stands as the major contribution to our understanding of this archaeological development.

Stothers' (1977:155-158) argued that Princess Point exhibited few continuities from earlier developments; that it "suddenly and dramatically appears in a full-blown, and well-developed state" with "no apparent predecessors" in southwestern Ontario. Hence, a population migration into Ontario, specifically from areas to the southwest, was postulated for its origin. Spatially, three regional concentrations of Princess Point sites were delineated which were termed "Foci": a Point Pelee Focus in southwesternmost Ontario; an Ausable Focus near modern Lake Huron; and a Grand River Focus centered around the west end of Lake Ontario (Stothers 1977:26-28). Stothers' (1977:78-114) also recognized some time depth to Princess Point and distinguished Early, Middle and Late phases, the last named being represented by the Porteous site, an actual village near Brantford. Overall, the Princess Point Complex was dated between ca. A.D. 600 to 1000.

Subsequent researchers have reassigned the Point Pelee Focus to the Riviere au Vase Phase of the Western Basin Late Woodland sequence (see Murphy and Ferris: this volume). Also, the Ausable Focus remains poorly known. Princess Point, therefore, is known almost exclusively from sites of the Grand River Focus and this author will use the term Princess Point herein to refer solely to material from that area. Related materials surely occur in other areas of Ontario as will be discussed subsequently, but our knowledge of these materials is not sufficient at the present time to specifically assign them to Princess Point. More recent researchers have also expressed reservations with the three phase scheme as originally proposed. In particular, the Porteous site has been assigned to the Early Ontario Iroquoian Stage based on the fact it is a village as well as the nature of the ceramics (see Fox 1982f:19; Williamson: this volume). It is worth inserting though that these arguments over where to end Princess Point and begin the Early Ontario Iroquoian development reflect the fact there is clear continuity between the two and one could presume on this basis that Princess Point is Iroquoian.

Thus, as used herein, Princess Point only includes the Early and Middle Phases in Stothers' (1977) terms and is restricted spatially to an area extending from Long Point on the west to as far east as the Credit River drainage on the northeast and the Niagara River area on the southeast. Within this general area a number of sites are known (Figure 6.1). Besides the type site and a number of other sites in the Cootes Paradise, Long Point and Niagara/Welland River areas, Stothers (1977:27-28) identified 16 sites along the lower Grand River area. Some of these, such as Cayuga Bridge and Grand Banks, are stratified with up to three separate layers representing different occupations by Princess Point and later groups. Notable among the Grand River sites is the Middleport site (Figure 6.1) where Wintemberg (1948) recovered Princess Point material stratigraphically below material associated with the later Middle Ontario Iroquoian Stage (see Dodd et al.: this volume). Since Stothers' (1977) synthesis a number of other sites have been noted and investigated, largely through salvage projects (e.g. Fox 1984c, 1986g; O'Brien n.d.). Of particular note is J. MacDonald's (1986a, 1986b) recent salvage excavation of the Varden campsite on Long Point which has provided a wealth of new subsistence data concerning the complex. This site was stratified with several, largely distinct occupation levels. The deepest two (Levels 3 and 4) contained Princess Point components, while the upper two (1 and 2), which were not distinct from each other across the whole site, consisted of a mix of Princess Point and later dating Early and Middle Ontario Iroquoian/Prehistoric Neutral occupations. Despite the number of known Princess Point sites, very few have been extensively excavated, Varden being the only notable exception.

A difficulty with many of the Grand River and Hamilton/Cootes Paradise camps, including the Princess Point type site, is the multi-component nature of the cultural deposits which rarely display well-defined stratigraphy. This factor has made definite assignment of minority artifact types and most important, carbonized corn, to the Princess Point complex components an impossibility based on present evidence. It also complicates age estimates for this development.

Material Culture

Ceramics

As with most Woodland assemblages, the prime Princess Point Complex diagnostics are "Princess Point Ware" ceramic vessels (Stothers 1977:54; see Figure 6.2). They are described as having collarless, everted rims and semi-conical bases (see Figure 6.3). Bodies are heavily cord roughened, necks are often decorated with cord-wrapped stick[1] horizontal lines over a corded surface, with an encircling row of circular exterior punctates.[2] Rims are usually decorated on the exterior, lip and interior, often with cord-wrapped stick obliques (e.g. oblique lines). Grit tempering is medium, to coarse in size and sherds on occasion display a poorly welded coil or rim fillet applique surface.[3]

Ceramic smoking pipes are not common, but the evidence suggests that most stems were smooth surfaced and round or rectangular in section (see Figure 6.4). The obtuse angle bowls could be smooth or decorated with incisions, cord impressions, cord-wrapped stick impressed geometric patterns and/or punctates (Stothers 1974e:40, 1977).

Lithics

The Princess Point Complex lithic assemblage consists of a limited range of bifacial chert tools and a variety of cutting and scraping tools produced on flakes (Stothers 1977: Plate XXXV). Among the biface inventory, triangular arrow points predominate, however, there may be some notched forms, and there are a small number of ovate knives and bulbous or T-base drills (see Figure 6.5).

The tentative attribution of notched bifaces to this complex is due to the reassignment of the Porteous village to the Early Ontario Iroquoian development, and the fact that the Grand Banks and Princess Point campsites are multi-component, also including subsequent Early Ontario Iroquoian components. "Weakly notched" (Stothers 1977:362) or stemmed bifaces are well documented on Early Ontario Iroquoian villages (Fox 1976:188; J. Wright 1966:34). The only Princess Point camp from which Middle Woodland Jack's Reef - like notched bifaces (see Figure 5.10c-d) have been recovered is the Maracle site (O'Brien n.d.); however, it is multi-component and the specimens may relate to a presently unidentified earlier Middle Woodland occupation.

Princess Point components in the lower Grand River valley are characterized by the almost exclusive use of a dark grey variant of Onondaga chert (Fox 1984c:6). Debitage morphology, plus the presence of block cores suggest that a portion of this chert was acquired from primary bedrock exposures; whereas, this was less the case on the recently investigated Long Point campsites where quality cobbles of Onondaga and Selkirk chert were acquired along the south shore beach (Fox 1986a). As would be expected, cobble cores are most common on the Varden site (J. MacDonald 1986a).

Ground stone tools are rare, but include chisels and perhaps adzes, as well as steatite pipes. Anvil/ hammerstones, cobble hammerstones and on fishing stations, notched pebble netsinkers, constitute the rough stone inventory for Princess Point Complex campsites.

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1 literally a twig or stick around which has been coiled a string or cord and the side of which has been pressed or "stamped" into the clay.

2 depressions made into the clay with a pointed object. Sometimes the object has been pushed in so far as to leave a bump or "boss" on the opposite vessel wall. The depression occurs on the outer or exterior surface of the pot, the boss on the interior in Princess Point. Generally, the reverse occurs on later Early Ontario Iroquoian vessels (e.g. punctates on interior and bosses on exterior; see Williamson: this volume).

3 a strap of clay added to the rim exterior.

FIGURE 6.2: Princess Point Complex Rim Sherds, Middleport Site.

Other Materials

The worked bone, antler and shell industry is impoverished when compared to earlier Middle Woodland assemblages. Bone awls, socketed antler tine points (with and without basal spurs or barbs), antler tine flaking tools and marginella shell beads are documented (J. MacDonald 1986a:70; Stothers 1977:268). Finally, a small Native copper fragment was excavated from the Cayuga Bridge site bank profile.

Subsistence and Settlement

Faunal Remains

Evidence from lower Grand River camps is limited, but reflects the usual range of important subsistence related and fur-bearer species seen on prehistoric sites in Ontario (Burns 1977:300-307). Deer figure significantly on the riverine oriented Cayuga Bridge camp. Other mammals included bear, grey squirrels, beaver, woodchuck and chipmunk. No bird remains have been identified and fish species represented are sturgeon, sucker, burbot, bass, and fresh water drum. Other food resources included fresh water clams and turtles. Additional species identifications included rabbit and fox from the Glass site (Stothers 1974e:42).

With its excellent dry sand preservation conditions, the Varden fishing station on Long Point produced a vast faunal assemblage reflecting the diversity of species which were harvested, even at a special purpose camp. A great majority of the bone derived from burbot, although fresh water drum, pike, yellow perch, walleye, bowfin, sturgeon,

FIGURE 6.3: Princess Point Vessel, Varden Site.

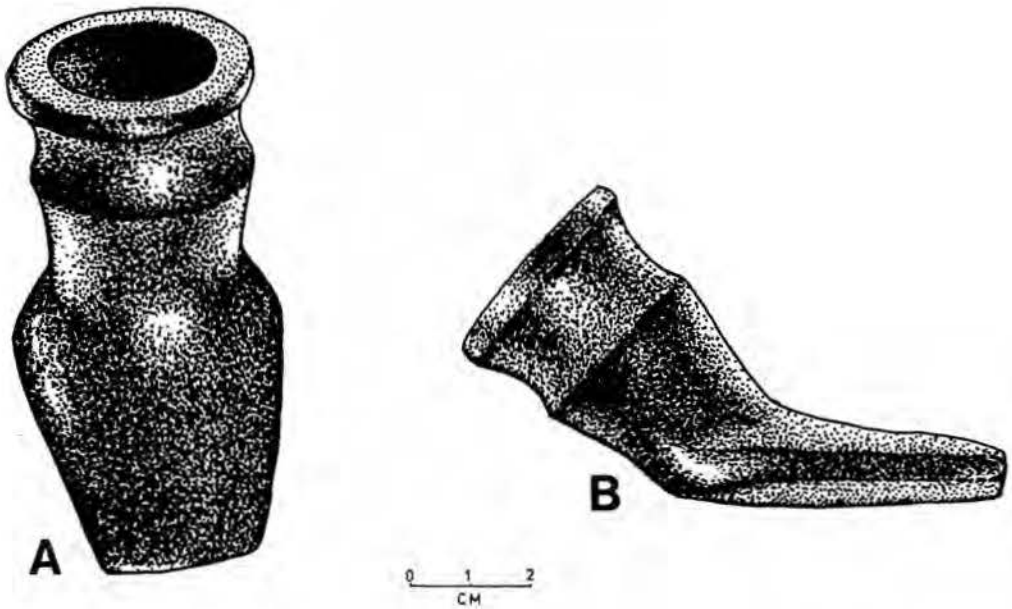


FIGURE 6.4: Ceramic Pipe, Surma Site Burial #1.

various catfish, pumpkinseed and bass were also present. Avian identifications include a variety of ducks, shorebirds, songbirds, and a bald eagle, while several species of turtle and snake are represented. White tailed deer, chipmunks, lemming, muskrat and mice are among the limited mammalian assemblage (J. MacDonald 1986a: Table XLVII).

Floral Remains

No carbonized cultigens were obtained from the Varden site, but seed remains suggest that raspberries, sumac, strawberries, elderberries, wild plum/cherry and wild grapes were consumed on this fishing camp (J. MacDonald 1986a:83).

Corn horticulture has been attributed to Princess Point. Yet, of the three sites producing carbonized corn remains (Stothers 1977:308), the Porteous village is considered now to be Early Ontario Iroquoian (Williamson: this volume), and the other two, Grand Banks and the Princess Point type site are multi-component, including later Woodland components. More recently, carbonized corn has been recovered from the Moyer Flats site which produced Princess Point-like ceramics (Fox 1986g); however, a calibrated C-14 date of A.D. 995 ± 110 on carbonized wood from the buried cultural stratum, combined with the proximity of the Blair Flats Early Ontario Iroquoian hamlet/village suggest contemporaneity with the Porteous village and thus a post-Princess Point provenience for this camp.

The relative abundance of carbonized corn kernels on the Porteous village (Stothers 1977:308) suggests that late Princess Point groups in the Grand River valley were probably beginning to experiment with corn horticulture. Carbonized tobacco seeds from a hearth feature on the Stratford Flats site (Fox 1984c) associated with carbonized wood which produced a calibrated date of A.D. 945 ± 165, suggest that this cultigen entered Ontario along with corn and also may have been grown by Princess Point peoples.

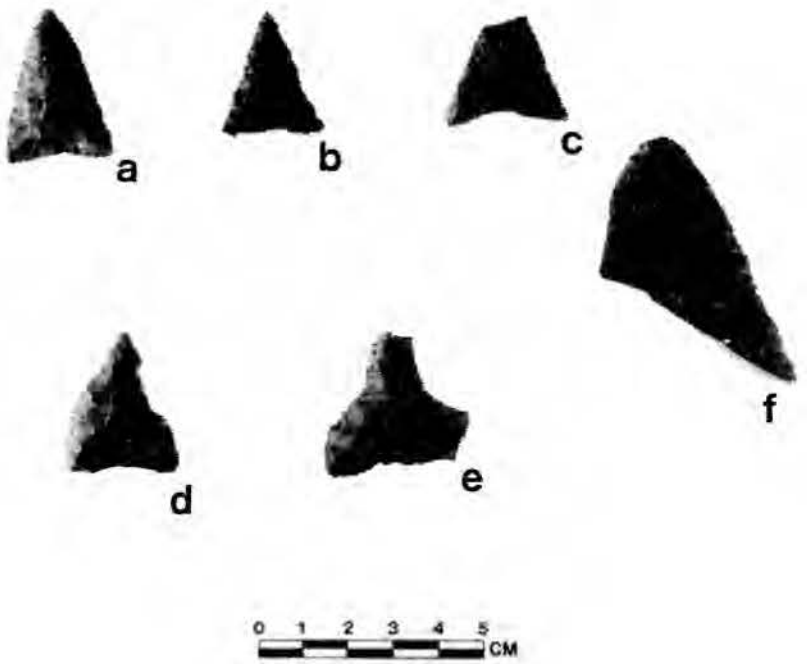


FIGURE 6.5: Princess Point Lithic Tools, Cayuga Bridge Site. A-D: Onondaga chert bifacial triangular projectile points; E: Onondaga chert T-based drill (minus tip); F: Onondaga chert biface fragment.

Settlements

Community pattern information is limited to one pit and one post hole from the Cayuga Bridge site (Stothers 1977:34), a pit from the Mohawk Chapel site (Fox 1984c), and 24 pits and posts each from the Varden camp (J. MacDonald 1986a). No house form and no extensive camp activity area data are available at present.

The seasonal pattern of Princess Point Complex settlement is impossible to determine in any detail given the limited data base. Stothers (1977:122) proposes that these peoples followed a seasonal round represented by larger spring to fall riverine or lacustrine population aggregation camps and small "fall through early spring" hunting camps occupied by groups "who dispersed into the interior regions during the cold and more rigorous times of the year." Such a pattern of warm season macroband agglomeration and cold season microband dispersal is consistent with that proposed for preceding Middle Woodland groups (Spence et al.: this volume) and that documented ethnohistorically for many northeastern North American hunter/gatherer societies. However, available data do not allow this proposition to be rigorously evaluated for Princess Point.

Chronology

The exact chronological placement of the Princess Point Complex is not yet certain. Recently, several researchers (J. MacDonald 1986b; Poulton 1985a; Timmins 1985) have attempted to interpret the range of radiocarbon dates now available (see Table 6.1). J. MacDonald (1986b:20) argues for a tenth century date for the Porteous village and agrees with Stothers' (1977) starting date of about A.D. 600 for Princess Point.

TABLE 6.1: Radiocarbon Dates for Princess Point and Princess Point-like Components.

COMPLEX/TRADITION Sites	UNCALIBRATED DATES	AVERAGE	CALIBRATED DATES
PRINCESS POINT			
Cayuga Bridge	750 ± 132 A.D.	-	890 ± 140 A.D.
Selkirk No. 5	740 ± 55 A.D.		
	950 ± 80 A.D.	845 ± 50 A.D.	910 ± 65 A.D.
Moyer Flats	900 ± 80 A.D.	-	995 ± 110 A.D.
Stratford Flats	900 ± 190 A.D.	-	945 ± 165 A.D.
Mohawk Chapel	430 ± 80 A.D.	-	505 ± 55 A.D.
Varden (Levels 1 & 2)	510 ± 120 A.D.*	-	593 ± 89 A.D.
Varden (Levels 3 & 4)	830 ± 240 A.D.	-	918 ± 164 A.D.
	620 ± 140 A.D.	-	675 ± 118 A.D.
WESTERN BASIN TRADITION (Princess Point-Like Wares)			
Neeb	685 ± 80 A.D.	-	-
	615 ± 80 A.D.	650 ± 80 A.D.	738 ± 158 A.D.
Pelee H2	640 ± 100 A.D.	-	735 ± 155 A.D.
Pelee H8	630 ± 95 A.D.	-	730 ± 155 A.D.
SANDBANKS TRADITION (Princess Point-Like Wares)			
Lakeshore Lodge	840 ± 60 A.D.	-	915 ± 60 A.D.
Driscoll	850 ± 210 A.D.	-	925 ± 325 A.D.
OTHER SITES			
Hunter	850 ± 50 A.D.	-	928 ± 138 A.D.
Radiant Lake 3	710 ± 130 A.D.	-	808 ± 228 A.D.

*Rejected by site investigator because out of sequence with lower (level 3 and 4) dates.

FIGURE 6.6: Hunter Site Vessel Rim Section.

Calibration of the generally accepted Princess Point dates results in a potential time span from ca. A.D. 500-1000. Yet, recognizing Porteous as a tenth century Early Ontario Iroquoian village, and accepting Moyer Flats, Stratford Flats and the upper strata of Varden as being of the same affiliation (J. MacDonald 1986b), the remaining dates could be interpreted as pre-A.D. 900. The two Selkirk No.5 dates are quite divergent despite being run on the same sample (see Table 6.1), while an early sixth century date for the Mohawk Chapel site appears somewhat early. A ca. A.D. 600-900 range in age does seem plausible (Stothers 1977:113); however, dates from elsewhere in Ontario provide useful comparative data and suggest an inception date of A.D. 600 may be too early.

There are a few radio-carbon dates associated with Princess Point-like wares (e.g. cord-wrapped stick impressed) from Western Basin Tradition sites in southwesternmost Ontario (Fox 1978, 1980a; Keenlyside 1978; Murphy and Ferris: this volume). All cluster in the eighth century (see Table 6.1). Further north, the Hunter camp is situated near the Saugeen River and has produced a Princess Point-like vessel (see Figures 6.1 & 6.6). A recent radiocarbon date (Ferris 1988) run on adhering carbonized food suggests an early tenth century provenience for this crudely manufactured analogue (see Table 6.1).

At the east end of Lake Ontario, an early tenth century date was obtained from the fifth stratum of the Lakeshore Lodge camp in Prince Edward County (S. Smith 1987; see Table 6.1). The dated cultural deposit contained Princess Point-like ceramics which have been included in the Sandbanks Tradition, as defined by Daechsel and

Wright (1988). Another tenth century date from the Driscoll site on the Rideau Lakes may apply to Princess Point-like ceramics from this camp (Watson 1982:16; Table 6.1). Further north on the Canadian Shield, a calibrated date of A.D. 808 ± 228, apparently associated with exterior corded and punctated ceramics, was obtained from the Radiant Lake 3 site (Mitchell 1975:64; Table 6.1). The earliest appearance of Blackduck (Princess Point-like) wares in northern Ontario is reliably dated to the ninth century. Finally, dates from New York state on assemblages containing cord-wrapped stick ceramics also all fall in the post-A.D. 700 period (W. Ritchie 1969:228-266; W. Ritchie and Funk 1973:119-122; Funk 1983:340).

Overall, the above data suggest that a ca. A.D. 900 terminal date for the Princess Point Complex is reasonable. This accords with Williamson's (this volume) initial date for the clearly derivative Glen Meyer branch of the Early Ontario Iroquoian Stage. At the opposite end, only two pre-A.D. 700 dates are available from Princess Point sites, one from Varden and one from Mohawk Chapel. The former, however, was out of stratigraphic sequence, occurring in the upper (Strata 1 and 2) at that site and dating earlier than the dates obtained on lower strata. Hence, it was rejected by the site investigator (J. MacDonald 1986b:12). Thus, the Mohawk Chapel date stands alone and this investigator has suggested it is incorrect, being contaminated perhaps by old wood (Fox 1984c). The remaining four Princess Point dates, when considered in light of the New York and other Ontario Princess Point-like ceramic dates, suggest an initial date for the Princess Point Complex of ca. A.D. 700-750 is more reasonable (see also Timmins 1985:68).

Mortuary Practices

This aspect of the Princess Point Complex and the practices of contemporary groups are poorly documented across southern Ontario, as burials have not been discovered on single component campsites and none of the potential Princess Point burials have been radiocarbon dated.

Stothers (1977:74-77) has assigned the Yellow Point mound, the Orchid site Unit B burials and the Cameron farm burials to the Princess Point Complex but this is highly conjectural. Neither the Orchid nor the Cameron graves produced diagnostic artifacts while the Yellow Point mound yielded what appears to be a classic Saugeen-style notched biface (Boyle 1902:25-29 & Figure 18) and which suggests it dates somewhat earlier.

Eight of the eleven Surma burials did contain grave offerings similar to but less elaborate and varied than those documented by W. Ritchie (1980) for his Point Peninsula Kipp Island Phase (see Figures 6.7 and 6.8). Each individual was placed in a separate grave, often in an articulated flexed position (Emerson and Noble 1966:79). The less elaborate nature of the grave goods and the inclusion of Levanna style triangular points like those from Princess Point campsites (Figure 6.7), suggests that these graves may be of Princess Point provenience. The only other possible Princess Point grave site documented to date is the Monarch Knoll burial reported from the Kitchener vicinity (Figure 6.1; Fox and Molto n.d.). It included a child in a flexed, articulated condition that had been provided with an olivella and marginella shell embroidered cowl and whelk shell columella bead necklace.

Contemporary Developments in Southern Ontario

Earlier comments relating to a redefinition of the Princess Point Complex, as well as its chronological placement, have referenced sites in far southwestern Ontario producing cord-wrapped stick impressed, exterior punctated Princess Point-like ceramics. Components such as Neeb and related campsites (AfHj-35; AfHj-40) near London (Murphy and Ferris: this volume) and Keenlyside's (1978) sites on Point Pelee in the west; as well as campsites such as Simons (Fox 1982f) to the north in the Ausable River drainage (see Figure 6.1), have been subsumed within the Riviere au Vase Phase of the Western Basin Tradition (Murphy and Ferris: this volume). Further north yet, along the Huron shore, similar ceramics have been recovered from campsites near the Saugeen and Sauble River mouths (Figures 6.6 and 6.9). Similar ceramics in Eastern Ontario have been identified as Princess Point (S. Smith 1987), and more recently as part of what has been called the Sandbanks Tradition (Daechsel and Wright 1988). Cord-wrapped stick impressed ceramics with exterior punctates have also been recovered from sites north of the St. Lawrence on the margin of the Canadian Shield. Swayze and Bridges (1973) report such wares from the Bloggett Point

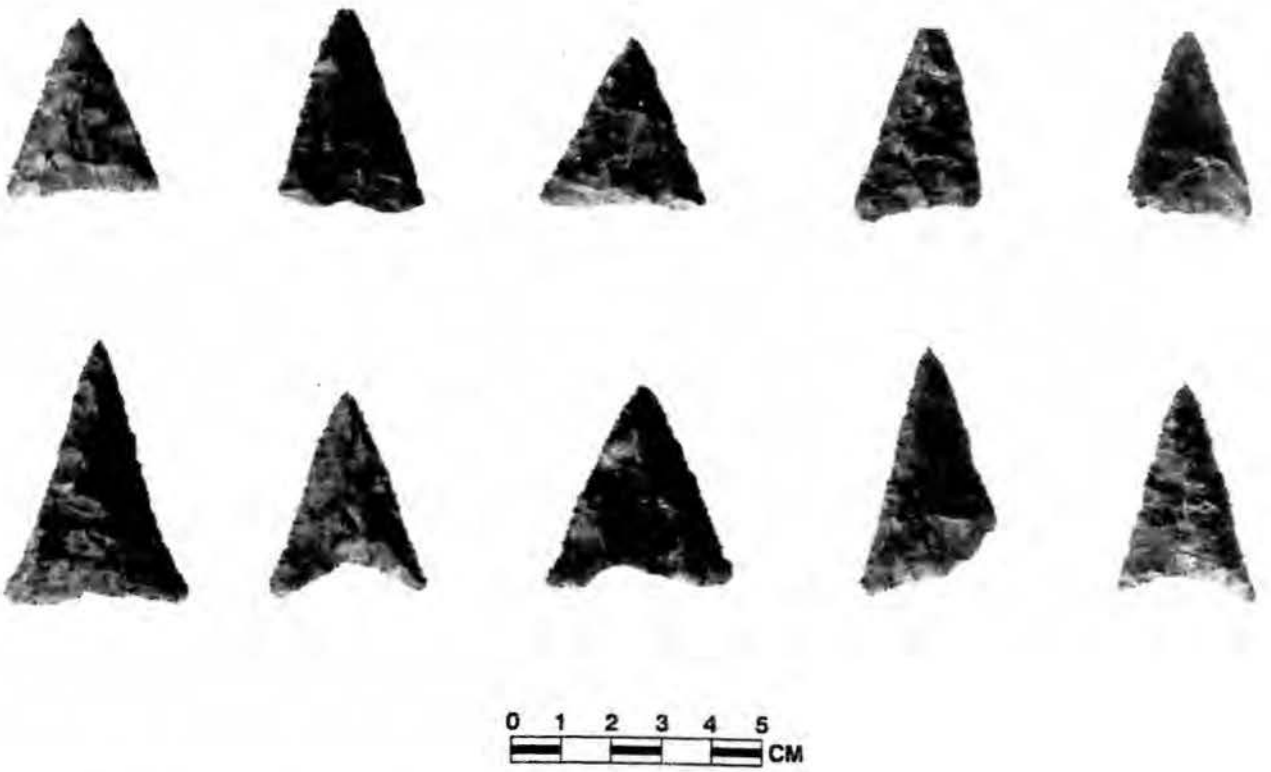


FIGURE 6.7: Triangular Projectile Points, Surma Site Burial #3.

and Jackson's Point sites on Charleston Lake (Figure 6.1). Both interior and exterior punctate and cord-wrapped stick impressed rims are described by Morrison (1977:62) from his Jackson's Point Rock Shelter excavations. Similar ware, possibly associated with a tenth century calibrated radio-carbon date (Table 6.1), has been reported by Watson (1982:16) from the Driscoll site on the Rideau Lakes, a short distance to the north. Just to the west, vessels lacking cord-wrapped stick impressions but with Princess Point-like oblique above horizontal motifs and/or a row of circular exterior punctates are reported on several multi-component campsites in the Rice Lake vicinity (Johnston 1968; Spence and Harper 1968). On the Canadian Shield, to the north, the multi-component Shebishikong site (J. Wright 1980b:2) has produced cord-wrapped stick impressed/exterior punctate ceramics, as have several sites in Algonquin Provincial Park (Hurley and Kenyon 1970: Figure 15.5). Mitchell (1975:62 and Figure 4A) also reports similar ceramics from the Algonquin Park region, as well as incised and dentate stamped rims displaying exterior punctates (Mitchell et al. 1966: Plate 1). To the east in the St. Lawrence Lowlands, salvage excavations on the multi-component Ault Park Site (Spence et al.: this volume) have produced a series of vessels with similar motifs, sometimes employing dentate stamping, which may be a regional variant in Princess Point times (e.g. Figures 6.10 and 6.11).

Outside the Princess Point Complex heartland, it is difficult to interpret the significance of these scattered stylistically similar ceramic vessels recovered from often multi-component fishing or hunting camps. The more northerly sites, especially those situated on the Canadian Shield, were likely occupied by Northern Algonquian speakers. Analogous ceramics to Princess Point ware probably reflect Algonquian acceptance and replication of Iroquois ceramic design technique and motif, a process well documented in later Woodland times (J. Wright 1981). Finally, similar ceramic vessels in the St. Lawrence Lowlands to the east were manufactured by groups who are virtually

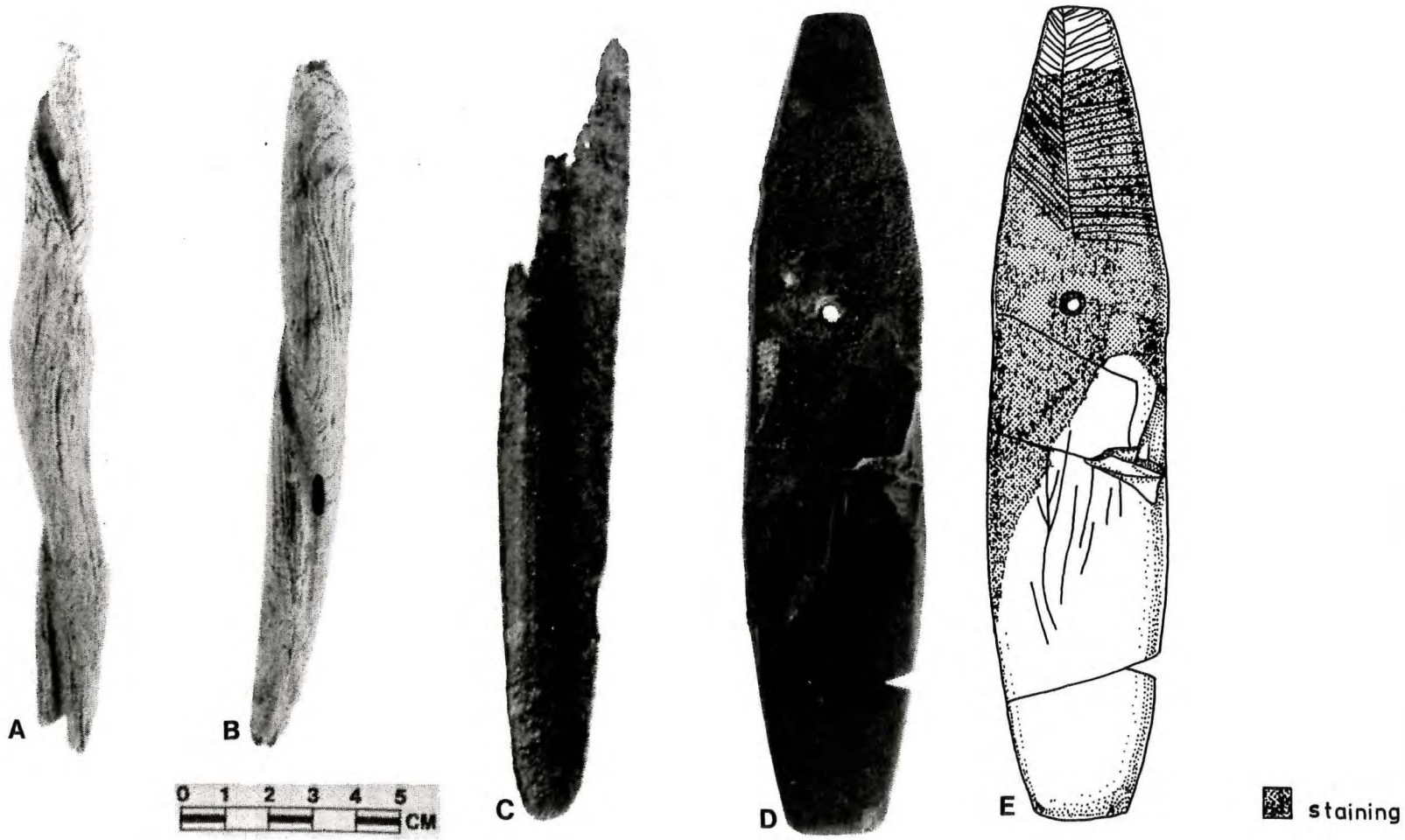


FIGURE 6.8: Surma Site Ritual Items from Burial #3. A-B: Whelk Columella beads; C: Bone tool fragment; D: Incised green banded slate gorget with limonite staining; E: Drawing of gorget showing incising.

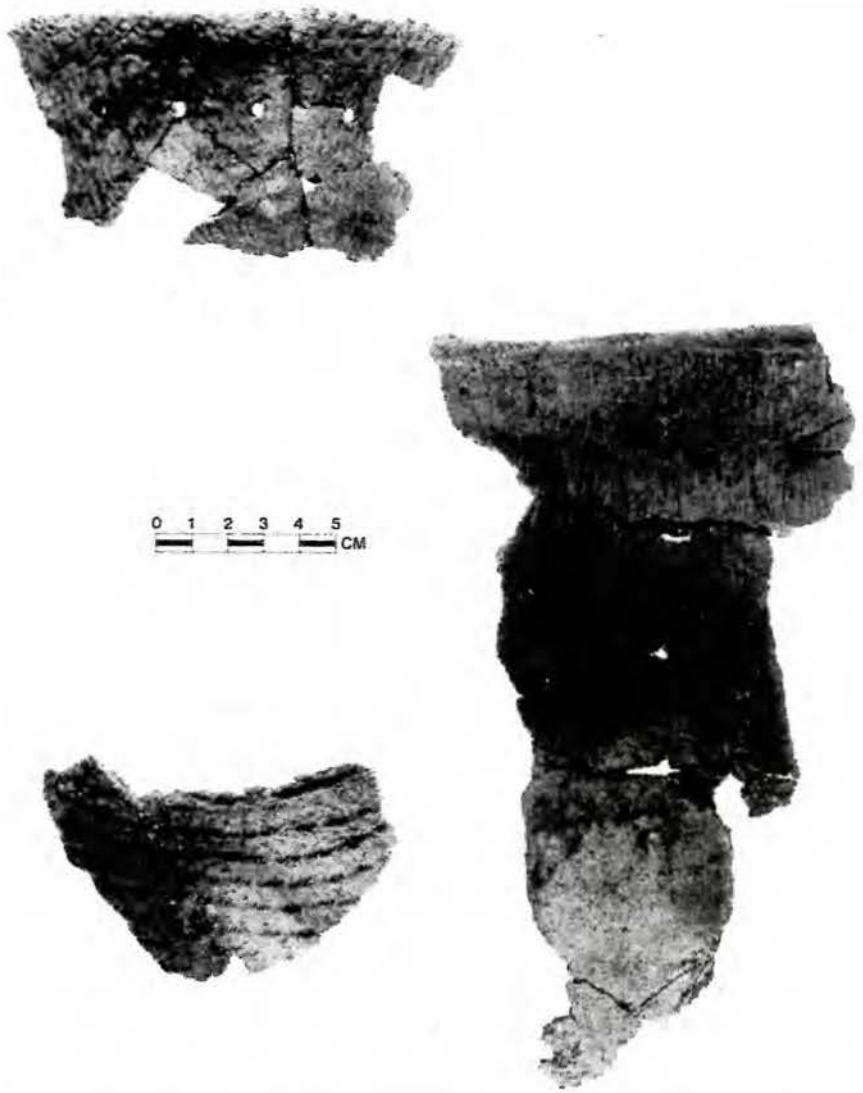


FIGURE 6.9: Bruce County Princess Point-like Ceramics, Donaldson and Chief's Point Sites.

undocumented archaeologically and who may have been with equal likelihood ancestral to the Northern Algonquian or Iroquoian speaking peoples later recorded by sixteenth century European explorers in the lower St. Lawrence valley (see J. Jamieson: this volume).

Origins of Princess Point and Related Developments

Stothers (1977:156) in his seminal volume proposed that the Princess Point Complex was introduced to Ontario through an influx of Hopewellian people from the southwest. He proposes this on the basis of "the total cultural inventory of this manifestation, as well as the associated Weaver Ware (Ohio) from two sites on Point Pelee", and suggests that a timely climatic amelioration allowed the introduction of maize growing to Ontario. However, the reassignment of Stothers' (1977) "Point Pelee Focus" to the non-Princess Point Western Basin Tradition has tended to deemphasize the ties between Princess Point and Ohio manifestations and led more recent workers to reject the population migration hypothesis in favour of in situ development from an antecedent Middle Woodland

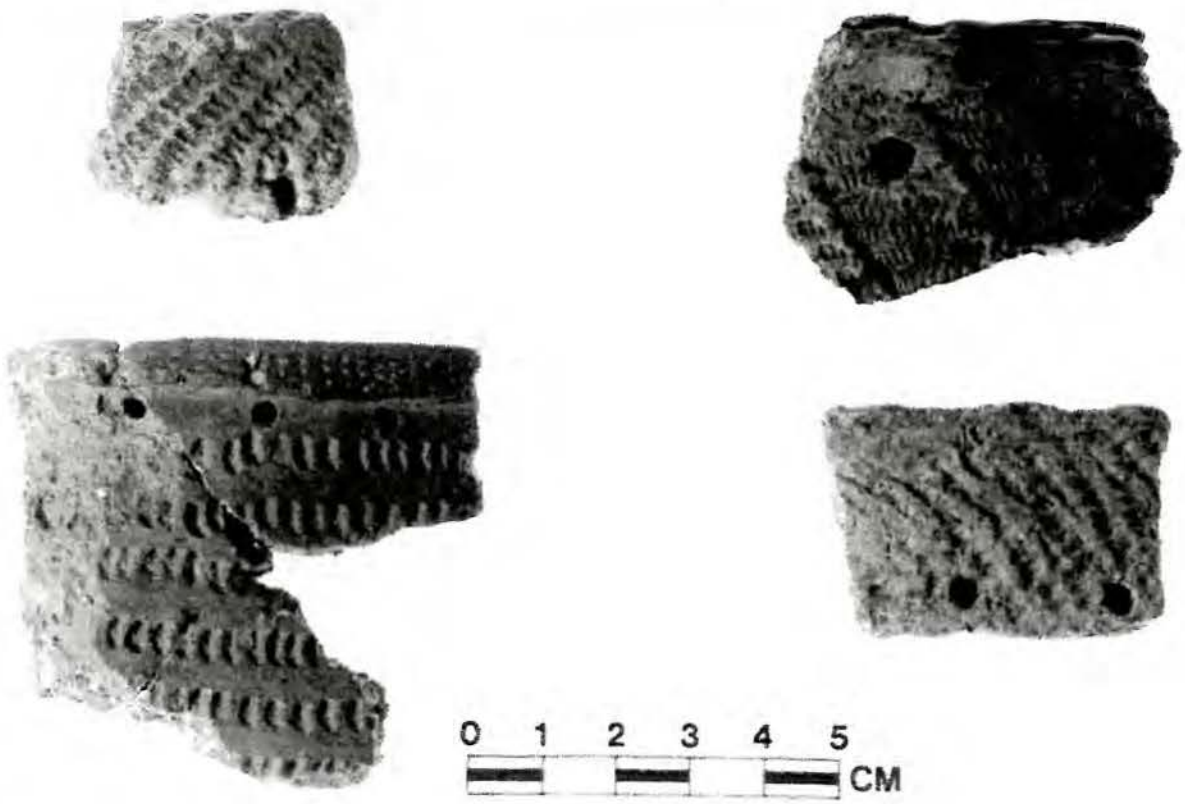


FIGURE 6.10: Ault Park Site Rim Sherds.

base in the area. Despite the existence of numerous campsites relating to the earlier Middle Woodland period in the lower Grand River valley, archaeological investigation of these components has been minimal (Stothers 1974e). This has made discussion of material culture continuity into the Princess Point Complex impossible, and is all the more unfortunate as the Grand River, similar to the Nottawasaga River drainage to the north, seems to be the point of interface between Point Peninsula groups to the east and Saugeen to the west (Spence and Fox 1986: Figure 1.21). It is possible that the odd find from the Grand River / Niagara Peninsula area represents the manifestation from which Princess Point developed in situ. For example, salvage excavation of the multi-component Ansari site (Fox 1983b) in the Niagara peninsula produced portions of a coil constructed, exterior brushed and punctated vessel which may represent an antecedent for Princess Point ware (see Figure 6.12).

Evidence therefore for either the migration hypothesis or for Princess Point "in situ" development and cultural continuity is tenuous at best. The only definitive method of evaluating Stothers' migration hypothesis may be to obtain the requisite comparative osteological data, an impossibility at present.

While evidence for cultural continuity is lacking at present in the Grand River valley and Niagara Peninsula, ceramic assemblages from Eastern Ontario hint at continuity out of the earlier Point Peninsula of the region. Sites such as Ault Park, similar to Pointe-du-Buisson 4 (Clermont and Chapdelaine 1982) to the east, have produced vessels with the impressed rim obliques over neck horizontals with exterior punctate motif using dentate stamp as well as cord-wrapped stick impressing decorative techniques. One potentially significant discovery is a coil constructed, pseudo scallop shell impressed vessel from the Wyght site (vessel no.62) which displays a two row oblique above horizontal motif and exterior punctates reminiscent of later cord-wrapped stick impressed ceramics (Watson 1980:157).

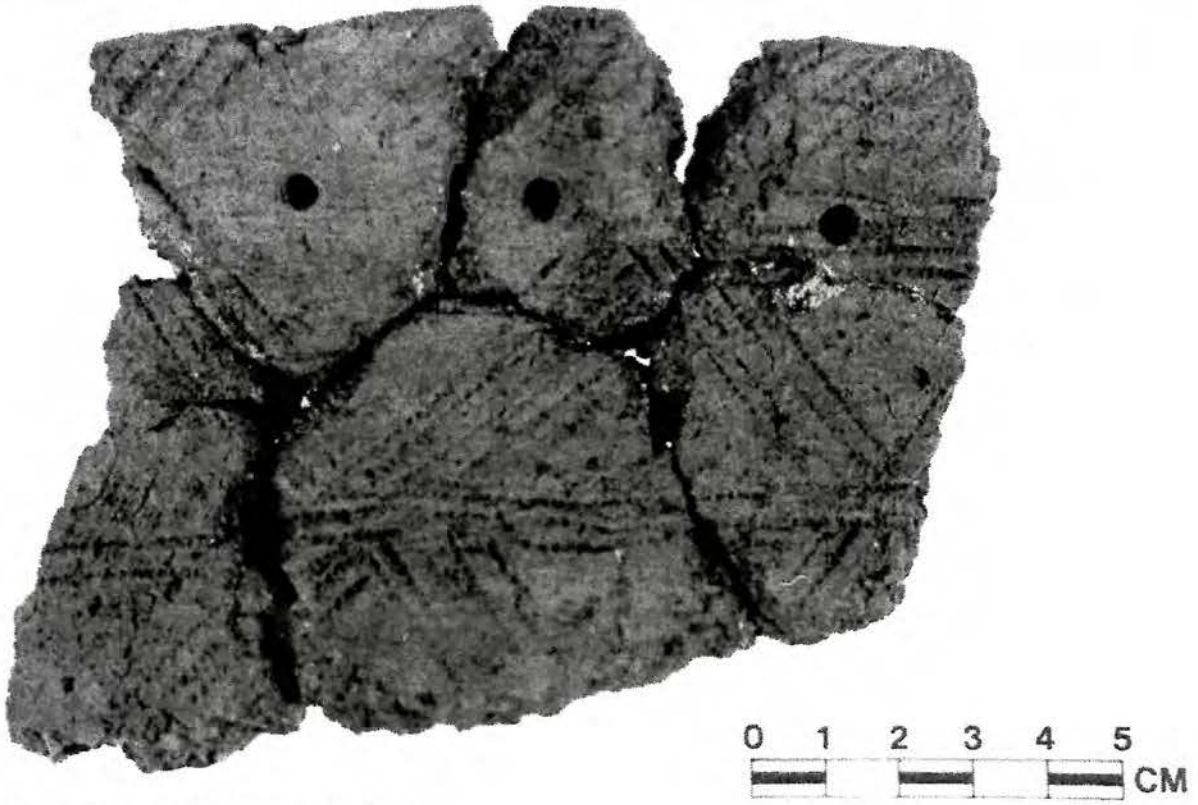


FIGURE 6.11: Ault Park Site Rim Section.

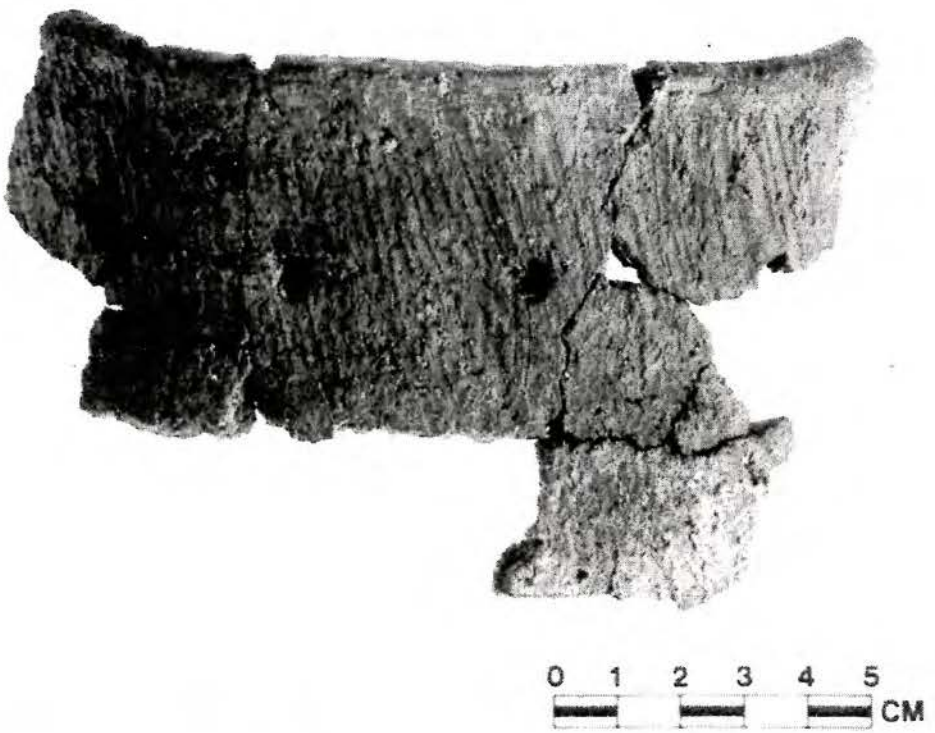


FIGURE 6.12: Ansari Site Rim Sherd.

Conclusion

The culture history of southern Ontario between A.D. 700 and 900 is no less complex than that of the preceeding Hopewell-influenced Middle Woodland or subsequent Late Woodland periods; however, it has received comparatively little attention from archaeologists to date. This is particularly unfortunate, as some major events influencing Ontario's Native groups occurred at this time. The economic and inferred social influence of the Ohio Middle Woodland cultures had waned, at the same time as a major subsistence item was probably introduced to Ontario from the south -- even though definitive evidence of maize on such sites is lacking at the present time. Maize horticulture was to change forever the lifeways of Ontario's Iroquoian speakers, for, the people who constructed the oval houses and double palisade at the Porteous village during the tenth century established a society considerably different than that of their ancestors. This economic and social transition as it applied to the various Native peoples of southern Ontario is the subject of following chapters describing Late Woodland period developments.

Acknowledgments

The author would like to thank the volume editor and reviewers for commenting on the concepts presented herein. They represent accumulated knowledge deriving from some twenty-five years of field work, combined with information (often unpublished) generously shared by other researchers too numerous to name individually. Naturally any errors in interpretation or omission are the sole responsibility of the writer. The writer also acknowledges the following individuals: Rob Pihl for providing access to the Ault Park artifacts; Dr. Susan Jamieson for permission to review the Trent University collections; Jean Langdon-Ford for access to the Archaeological Survey of Canada collections; and John Reid and Dr. Martha Latta of the University of Toronto for allowing the Surma burial artifacts to be drawn and photographed. Finally, Janie Fox and Ian Kenyon produced the Surma site grave good drawings, Ian Kenyon and Neal Ferris printed most of the artifact photographic plates and Naomi Powlett word processed the final chapter draft.

CHAPTER 7

THE LATE WOODLAND WESTERN BASIN TRADITION OF SOUTHWESTERN ONTARIO

Carl Murphy and Neal Ferris

Introduction

During the Late Woodland there was a distinct cultural occupation in the western-most corner of southern Ontario, incorporating the present Counties of Essex, Kent, and Lambton, as well as portions of west Middlesex and west Elgin (Figure 7.1; Table 7.1). To date little substantive investigation has focused on this group, although it appears related to an archaeological culture extending around the western end of Lake Erie into southeast Michigan and northwest Ohio.[1] The materials from Michigan and Ohio have been classified under a number of terms. The first substantial analysis of this material was by Fitting (1965). Using data from Greenman (1937), and collections from a number of sites, Fitting termed this Late Woodland culture the Younge Tradition. Since that time a number of efforts have refined and re-defined this tradition (Krakker 1983; Prahl et al. 1976; M. Pratt 1981; Stothers 1975a, 1975b, 1978; Stothers and Graves 1983; Stothers and Pratt 1980, 1981). Disagreement currently exists among some researchers over precise terminology, classification and distinctions. Some of this disagreement is based on unclear connections between earlier Middle Woodland populations in the area and succeeding Late Woodland groups, as well as differences in opinion regarding reasons for material culture change and ethnic affiliation. For the purposes of this presentation, we will use a modified definition of the term Western Basin Tradition (Prahl et al. 1976; Stothers 1975a), which we define as encompassing the Late Woodland archaeological manifestations occurring in southwestern Ontario, southeastern Michigan and northwestern Ohio and centered along the drainages of western Lake Erie, Lake St. Clair and lower Lake Huron. These groups appear to represent in situ cultural developments out of earlier local Middle Woodland occupations who maintained a presence in southwestern Ontario until some time between A.D. 1550 and 1600. These peoples are interpreted as being distinct from Iroquoian populations to the east, and Mississippian groups to the south, but within the sphere of influence, at various times, of each. It is our contention that these people represent prehistoric Central Algonquians and most importantly, maintained an Algonquian settlement-subsistence pattern based on the rich environment of western Lake Erie and lower Lake Huron.

Until recently, the Western Basin Tradition received little close attention from researchers in southern Ontario. Most of the preliminary discussion has come from archaeologists working in Michigan and Ohio who referred to the sparse database in Ontario only when commenting on the range of this cultural group. In Ontario, it was not uncommon even twenty years ago to consider southwestern Ontario as a sort of cultural vacuum during the Late Woodland, lacking any major archaeological occupation (J. Wright 1972a:64). More recently, the few sites known for the area were generally subsumed as part of the more easterly Ontario Iroquoian Tradition (Keenlyside 1978; Stothers 1975b, 1977, 1978; Tanner 1987:27; J. Wright 1966:55; but see J. Wright 1987c). Since that time, archaeologists have discovered how vast the archaeological record is for the Late Woodland in southwestern Ontario. Unfortunately, with only a few notable exceptions, the little work to occur on Western Basin sites tended to be sub-

[1] Although recent work by Stothers and Bechtel has documented materials to the west near the Indiana/Ohio border, for the purposes of this article the term northwest Ohio is meant primarily to refer to that portion of the state extending from Cleveland to Toledo and the Michigan border, and draining into Lake Erie.

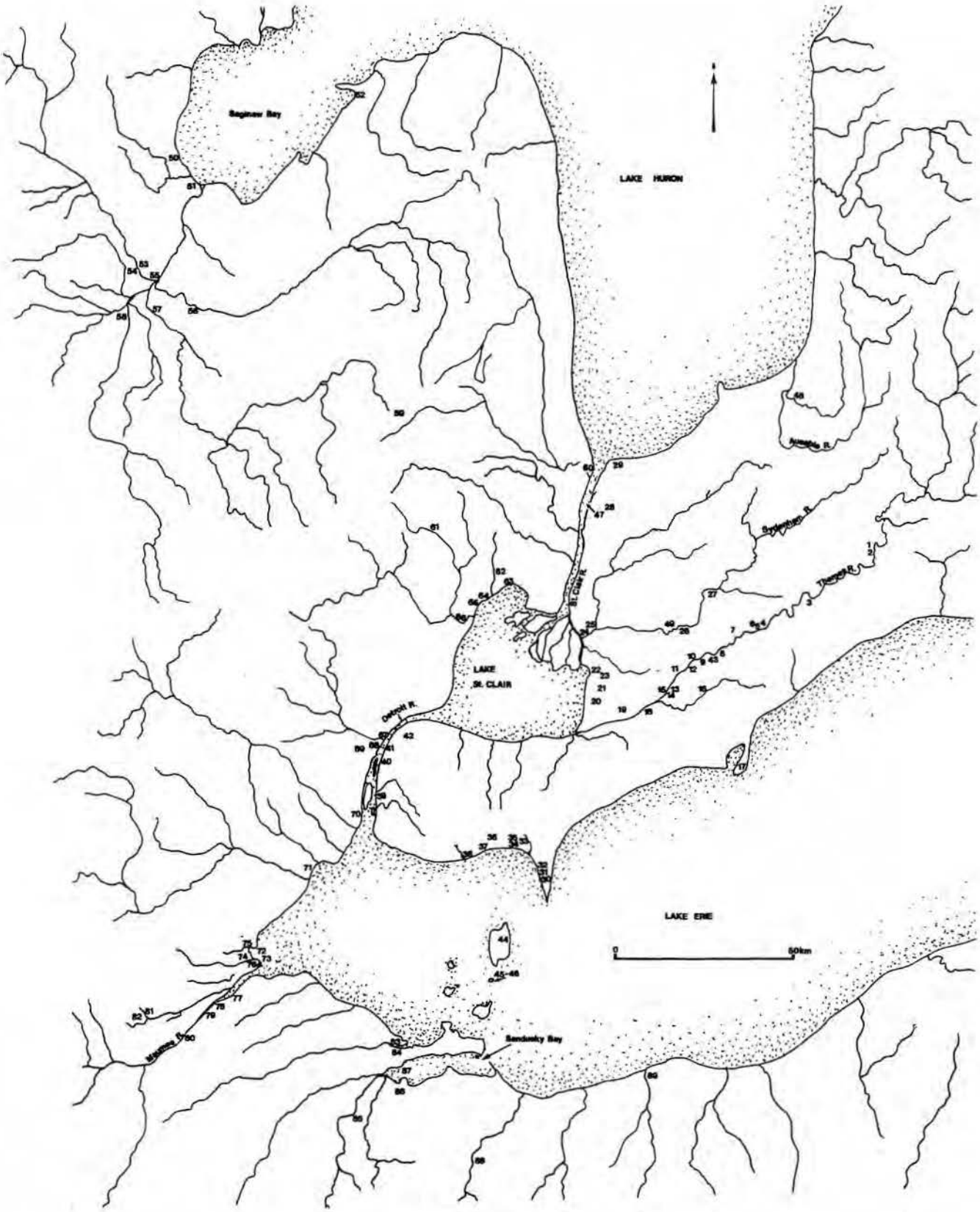

Saginaw Bay
LAKE HURON
LAKE ST. CLAIR
LAKE ERIE
Sandusky Bay
Detroit R.
St. Clair R.
Sydenham R.
Thames R.
Ausable R.
Maumee R.
0
50km

FIGURE 7.1: Some Western Basin Tradition Late Woodland Sites. Refer to Table 7.1 for site names. Note: While Late Woodland sites in the Saginaw Bay area show similarities to the Western Basin Tradition, they also exhibit influences from the north and west. Thus, it is perhaps more appropriate to consider these Saginaw Bay sites as representing a culturally similar but distinct Late Woodland group.

standard, providing little in the way of usable data, and thus relegating the Western Basin Late Woodland to the far periphery of Ontario archaeology. While the database is still weak and filled with gaps, recent work on the Western Basin in southwestern Ontario has enabled us to better assess this cultural manifestation, and hopefully to introduce it into the broader "canon" of Ontario archaeological research.

Previous Research

Michigan

.The Late Woodland cultural sequence in southeastern Michigan related to the Western Basin Tradition was first defined by James Fitting (1965, 1966, 1970), and was referred to as the Younge Tradition. Most of the materials studied by Fitting derived from earlier excavations undertaken by members of the University of Michigan, Museum of Anthropology (Greenman 1937, 1939; Hinsdale 1931). Greenman undertook several projects in the 1930's near Detroit, including work at the Younge (Greenman 1937), Riviere au Vase (Fitting 1965), Wolf (Greenman 1939), and Gibraltar sites (Greenman 1958). Unfortunately, all of these sites have since been destroyed. Greenman's site assemblages remain the primary reference material for the Late Woodland in southeastern Michigan, and have been re-analyzed on several occasions (Fitting 1965, 1970; Halsey 1976; Brashler 1981; Krakker 1983). Additional information on Michigan's Late Woodland is available from a number of surveys and CRM investigations but data from these reports tend to be preliminary in nature, and thus of limited value for the purposes of this investigation (e.g. Brose and Essenpreis 1973; Carstens 1972; Holman et al. 1988; Krakker 1984; Shott and Welch 1984).

In 1965, Fitting divided the Late Woodland Younge Tradition into four time-sequential "phases" (1965:140-141). These phases were named after those sites containing the largest frequency of ceramics representing the respective period, although the sites themselves were multi-component. The phases identified by Fitting were: Riviere au Vase (A.D. 800 to 1000); Younge (A.D. 1000 to 1200); Springwells (A.D. 1200 to 1400) and Wolf (1400 A.D. to unknown). In later discussions of the Wolf Phase, Fitting suggested this period should range between A.D. 1250 and 1450 (Fitting 1970:160; Fitting and Zurel 1976).

For this Tradition, Fitting distinguished two distinct ceramic "wares," which he designated Wayne and Riviere (1965:40). Wayne wares were small, exterior cordmarked vessels recovered from the Fort Wayne mound, Riviere au Vase and Gibralter sites. These wares were considered to represent the late Middle Woodland - early Late Woodland transition (ca. A.D. 600 to 900), and replaced around 1000 A.D. by the larger, highly decorated Riviere wares found at the Riviere au Vase, Younge, and Wolf sites (1965:40-41). Both Wayne and Riviere wares were divided into a number of pottery types, the majority of which were based exclusively on primary exterior decorative technique, and these types were hesitantly given some temporal significance (Fitting 1965:40-47). While a number of Fitting's types do appear to be distinctive for a particular phase, many more have proven to be of little temporal significance. Consequently, except for those truly distinctive ceramic types, in this paper Fitting's types will not be used.

Wayne wares were not included in the original Younge Tradition ceramic sequence, and since 1965 Fitting has interpreted these Wayne wares as representing a separate cultural tradition. This Wayne Tradition was thought to have either contributed to, or was replaced by the developing Younge Tradition (Fitting 1970). Since Fitting's analysis, there has been little agreement in Michigan with regards to whether Wayne wares represent a distinct cultural manifestation (Brashler 1981; Halsey 1976; Prahl et al. 1976), or alternatively are simply a common early Late

TABLE 7.1: Western Basin Tradition Sites Listed on Figure 7.1.[1]

MAP NUMBER[2]	SITE	PHASE[3]	MAP NUMBER	SITE	PHASE
Ontario Sites					
1	Neeb	R	45	Riddell	Y
2	Sibelius	R	46	Sulston	Y/W
3	Dymock	Y	47	Stag Island	S(?)
4	Couture	R	48	Simons	R
5	Fairfield Creek	R	49	Steele	Y
6	Park	R			
7	Sherman	S	*Michigan Sites*		
8	Van Hooste	R			
9	Minchell	R or R-Y	50	Tobico	R/Y(?)
10	Depencier-Shaw	S	51	Fletcher	R/Y or S
11	D. Crundwell II	S	52	Caseville	R
12	D. Crundwell III	Y	53	Stadlemeyer	Y/S
13	Krieger	R/Y/S(?)	54	Bussinger	R/Y/S
14	D. Crundwell I	Y	55	Schultz	R/Y/S
15	D. Crundwell V	S	56	Bugai	R/Y
16	Van Bemmel	R/Y	57	Hodges	R/Y
17	Indian Clearing	R-Y(?)	58	Mahoney	R/Y/S(?)/W
18	D. Crundwell IV	S	59	Younge	R/Y/S
19	Belanger	S	60	Draper Park	R/Y
20	Bateman's	S	61	Graham-Vogt	W
21	Caron	S or S-W	62	Fuller	Y/S
22	Liahn I	S/W	63	Wolf	Y/S/W
23	Rickley	S	64	Furton	R/W(?)
24	Weiser	W	65	Riviere au Vase	R/Y/S
25	Libby-Miller	R/W	66	Verchave I,II,III	R/Y/S(?)/W
26	Bellamy	S	67	Fort Wayne Mound	R/Y/S
27	Koopman II	Y or Y-S	68	Springwells Mound	R/S
28	Parker Earthwork	W	69	Butler	S
29	Macklin	S	70	Gibraltar	R/W(?)
30	11H10	R/Y	71	Sissung	R(?)/Y
31	11H8	R/Y	72	Gard Island	R/Y
32	11H2	R(?)/Y	73	Indian Island	R/Y/S(?)
33	Dick	Y/S	74	Morin	Y/S(?)
34	Robson Road	R/Y/S	75	Reau	R/Y
35	Cherry Lane	Y/S			
36	Bruner-Colasanti	Y/S	*Ohio Sites*		
37	Laramie	Y/S/W(?)			
38	Cedar Creek	S(?)	76	Doctor's	Y
39	Henderson	Y	77	Indian Hills	Y/S/W
40	Lasalle-Lucier	Y/S	78	Fort Meigs	W
41	Turkey Creek Ossuary	S	79	MacNichol	Y
42	Lucier - E.C. Row	S or S-W	80	LaSalle	W
43	Williams	R(?)	81	Pati-Dowling	S
44	Myriel Ryersee	Y or Y-E	82	Cufr	S

Table 7.1: Continued.

MAP NUMBER	SITE	PHASE	MAP NUMBER	SITE	PHASE
Ohio Sites (Continued)					
83	Libben	R/Y(?)/W	87	Squaw Island	Y
84	Peterson	W	88	Mixter	R/E/W
85	Bear Fort	W	89	Eiden	E/W
86	Pearson	E/W			

[1]: Phase designations based on report author's determination and/or examinations of site collections.
[2]: Refers to number on Figure 7.1.
[3]: R = Riviere au Vase; Y = Younge; S = Springwells; W = Wolf; E = Eiden; Y/S, etc. = multi-component site; S - W = transitional site; (?) = unsure designation.

Woodland ceramic type utilized by several groups throughout the lower and western Great Lakes (Krakker 1983; Lovis 1990). While the Wayne Tradition as a separate entity remains a controversial topic, subsequent studies in Michigan have tended to support Fitting's original sequence for the Late Woodland (Halsey 1976; Brashler 1981; Krakker 1983).

Ohio

Since the mid-seventies, much of the research on the western Lake Erie basin Late Woodland has come from northwestern Ohio. This research has identified a similar Late Woodland manifestation to that reported from southeastern Michigan, which is seen to extend from the Michigan border, around the south shore of Lake Erie and as far east as Sandusky Bay and Cleveland (Cufr 1969; Prahl 1969, 1974; Stothers and Miller 1977; Stothers and Prahl 1974). Much of the work in this area, particularly on the Western Basin occupations from Sandusky westwards, has been based at the University of Toledo, under the direction of Dr. David Stothers. Stothers, along with several of his students and colleagues, refined the original Fitting sequence, renaming this archaeological manifestation the Western Basin Tradition (Stothers 1975a, 1975b, 1978; Stothers and Pratt 1980, 1981; Stothers and Graves 1983; Stothers, Graves and Redmond 1984). Based on Stothers' (in press) most current synthesis, the beginning of the Western Basin Tradition was a result of an intruding archaeological complex moving into Ohio, originating from the Western Basin Middle Woodland of southwestern Ontario (see Spence et al.: this volume). These people are thought to have slowly expanded into the region of southeastern Michigan and northwestern Ohio by about A.D. 500, displacing a "co-tradition" Sandusky people east into the Sandusky Bay region. Development during the succeeding Western Basin Late Woodland Riviere au Vase (ca. A.D. 500-1000), Younge (ca. A.D. 1000-1200), and Springwells phases (ca. A.D. 1200-1300), is seen as continuous. These people are believed to have maintained a variant of an Iroquoian settlement-subsistence pattern, and in fact are thought to be an Iroquoian cultural group (Stothers 1978; Stothers, Graves and Redmond 1984). By the end of the Springwells phase, Stothers' Sandusky Tradition peoples expanded west and north (ca. A.D. 1300-1400), displacing Western Basin peoples, who in turn moved east and joined other prehistoric Neutral Iroquoian groups. The conquering Sandusky peoples are thought to be Algonquian, maintaining a Mississippian settlement-subsistence strategy (Stothers, Graves and Redmond 1984). Post-Springwells Phase occupations in southwestern Ontario are thus considered to be by advancing Sandusky peoples, archaeologically evolving from the Wolf (ca. 1300-1400 A.D.) to Fort Meigs Phase (ca. A.D. 1400-1500), and finally to the Indian Hills Phase (ca. A.D. 1500-1650). In the historic period, Stothers identifies this group as the Algonquian speaking Assistaeronon, the people of the Fire Nation, who were subsequently defeated through warfare by the Neutral (Stothers 1981).

This synthesis of northwest Ohio Late Woodland prehistory is not shared by other researchers. Most notably, M. Pratt, D. Brose, and J. Bowen (personal communications; see also Bowen 1989, 1990; Brose: in press) are in agreement, and in opposition to Stothers' view. They suggest that northwestern Ohio Late Woodland groups evolved from a common base. There were no population displacements at the end of the Middle Woodland or during the Riviere au Vase Phase, just local, continuous developments. Changes in ceramic styles between the Sandusky and Maumee regions at the end of the Younge Phase are seen as due to differing cultural influences, rather than to population movement. The Springwells phase, which they see as primarily a Michigan and Ontario occurrence (Brose, in press), develops a number of ceramic influences derived from Iroquoian groups to the east, while the Mixter-like wares occurring in the Sandusky region during the same period are thought to derive from more southerly, Mississippian cultural influences. The subsequent rapid appearance of these wares in the Maumee River region is not seen as a sign of advancing Algonquian-speaking Sandusky peoples pushing back a Western Basin Iroquoian-speaking group into southwest Ontario, but rather is a product of technological discovery and influence on local populations. While hesitant to identify linguistic or ethnic affiliation for this Late Woodland phenomenon, and pointing out the pitfalls of equating ethnicity with material culture (Brose 1971, 1978b, in press), the implication of their sequence is one of local group continuity around the western basin of Lake Erie through much of the Late Woodland.

Ontario

Until recently, very little systematic investigation of Late Woodland occupations in southwestern Ontario has occurred. Only two regional studies have been undertaken to date: by Keenlyside for Point Pelee (1977, 1978), and in southeastern Essex County around the Leamington area by P. Reid (1979, 1981, 1982, 1983a, 1983b). Prior to and following the work of Keenlyside and Reid, several sites have been the focus of full or partial excavations. This included early work by Wintemberg (1936b) at the Lucier site, subsequent work at the Parker (T. Lee 1958; Axelson 1964), Krieger (Kidd 1954, 1956) and Laramie (Bond 1966) sites, and more recently, work at the Weiser (Carey 1971; Kroon 1972a, 1974; P. Reid 1978a), Rickley or Peterkin (Kroon 1975; Walstedt 1975; Williamson 1980a), Bellamy (Murphy 1987), Belanger (Ferris and Crundwell 1988), Liahn I (I. Kenyon 1988), Sherman (Murphy 1989), and Van Bemmel (Ferris 1989b; Sloan 1987) sites. In addition, several surveys have documented a number of Western Basin Late Woodland sites, based primarily on surface collections. These include work: in Essex and Kent counties by Carey (1978, 1979, 1981), Foster (1982b), T. Lee (n.d.), P. Reid (1979), Knight and Ramsden (n.d.) and Walstedt (1980); in the Thames drainage of Middlesex and Kent Counties by M. Wright (1977); in Elgin County by Connoy (1982); on Pelee Island by Keenlyside (1980) and Trider (personal communication); in Rondeau Provincial Park by Stothers (1974d) and Newton (1975); on Middle Island (Fox 1984d); and recently on the Walpole Island Native community at the head of Lake St. Clair (N. Adams 1987, 1989). The remainder of the work on Western Basin Late Woodland sites in southwestern Ontario has taken the form of salvage excavations, primarily by the Provincial government (Ferris and Mayer 1990; Fox 1982a, 1982b, 1983b, 1986f, 1987a, n.d.a, n.d.b; I. Kenyon et al. 1988; Lennox 1982, n.d.b; Lennox et al. 1989; Murphy 1988a; M.P.A. 1988; P. Reid 1978b; Timmins 1989; P. Wright 1976, 1977). Augmenting this list of site excavations are numerous collections of site material in a host of private collections from southwestern Ontario, several of which have been documented (Carey 1978, 1979, 1981; M. Tuck n.d.; Vantomme 1965).

In the following discussion, we will present the known Western Basin data base from southwestern Ontario, and limit our interpretations to this region. While we will obviously discuss this cultural manifestation within the framework originally formulated in Michigan and Ohio, we are hesitant to discuss specific elements of the material culture of the southwestern Ontario Late Woodland peoples in relation to adjacent regions, due to a lack of comparable and accessible data, and the possibility of temporally and culturally differing regional patterns (cf. Krakker 1983). In general we see the Late Woodland Western Basin Tradition of southwestern Ontario as following a modified version of the four established temporal stages defined by Fitting. These are: the Riviere au Vase Phase (ca. A.D. 600 to 800 or 900); the Younge Phase (ca. A.D. 800 or 900 to 1200); the Springwells Phase (ca. A.D. 1200 to 1400); and lastly, the Wolf Phase (ca. A.D. 1400 to 1550 or 1600). In southwestern Ontario, these phases are defined based on changing ceramic styles, and most importantly, by alterations to settlement-subsistence strategies.

Material Culture of the Western Basin Late Woodland

Riviere au Vase Phase

The early Late Woodland Riviere au Vase Phase in southwestern Ontario developed directly from the earlier Middle Woodland Couture complex (Spence et al.: this volume). This transition from the Middle to Late Woodland period does not appear to have been abrupt, although distinctive changes in ceramic manufacture and vessel decoration did occur by the 6th or 7th centuries A.D. The latter stages of the Riviere au Vase ceramic sequence are almost indistinguishable from the Younge Phase, which makes precise distinctions difficult. Further complicating our knowledge of the Riviere au Vase Phase is the fact that most of the database for this period comes from multi-component sites lacking discrete stratigraphic control.

The ceramic vessel forms which bridge the Middle - Late Woodland transition have been named Wayne wares (Fitting 1965). In Ontario, these wares are seen to have developed from Couture complex vessels, which display vertical to oblique exterior cordmarking, extending to a pointed or flattened lip. Often only the lip or the interior receive further decoration. This pattern is continued into the Late Woodland, although various forms of exterior decoration appear early in the Riviere au Vase Phase (Lovis 1990). The earliest of these wares are only distinguishable from Middle Woodland vessels by a dramatic reduction in wall thickness. Thin vessels appear to be a result of replacing coiling techniques with paddle and anvil methods of manufacture, although Wayne wares of the Riviere au Vase Phase may often display coil breaks in the rim or neck area.

In general, typical Wayne wares are small (ca. 2 liters) and thin-bodied, with low, uncollared and uncastellated vertical to weakly everted rims. Vessel necks are slightly constricted with well-defined shoulders, globular to somewhat elongated bodies, and rounded or semi-conoidal bases (Figure 7.2). Exterior vessel surface is invariably cordmarked or fabric-marked from the base to the lip. Cordmarking on the rim/neck area is usually vertical to slightly oblique, while vessel bodies may appear more roughened and occasionally can be scarified. Individual cord marks are coarse, often leaving grooves 1 to 2 mm deep on the exterior surface (e.g. Figures 7.3 and 7.4). Vessel interiors are generally smoothed, but wiping, and rarely, fabric or cord impressions, are seen on portions of the interior surface. Vessels are poorly fired with unconsolidated lamination and a friable texture, both distinctive traits of the early Late Woodland.

Rim lips are usually rounded to slightly flattened, and in profile are not thickened, although some compression may occur with the application of lip decoration. Wayne ware lip surfaces are rarely undecorated, and techniques include cord roughening similar to the exterior, otherwise transverse or oblique dentate suture, or cord-wrapped stamps predominate. When interior decoration occurs, it is usually a duplication of the stamp impressed on the lip.

The largest sample of these early Riviere au Vase Phase ceramics have been recovered from Point Pelee in southeastern Essex County (Keenlyside 1977, 1978). These vessels appear to be identical to the small cordmarked Wayne wares Fitting (1965) and Halsey (1968) report from the primary occupations of the Fort Wayne, Gibralter, and Riviere au Vase sites near Detroit (Figure 7.1).

In 1965 Fitting divided Wayne wares into a number of variants, based on lip and exterior decorative motifs, and surface treatment. Fitting also suggested that these variants may reflect temporal significance (1965:158). However, one of the best time markers within the Point Pelee assemblage, which appears to hold true for much of the Late Woodland, is vessel rim profile and overall vessel shape. For instance, Keenlyside found that vessels displaying straight rim profiles had plain, cord roughened exteriors, whereas everted rims often received some form of additional decoration (1977:487).

During the transition from the Middle to Late Woodland, small exterior cordmarked vessels similar to Wayne wares appear to have been distributed over a broad geographic area. Typical Wayne wares or variants are found from the London area of southwestern Ontario (M.P.A. 1988), and as far north as Georgian Bay. To the west they

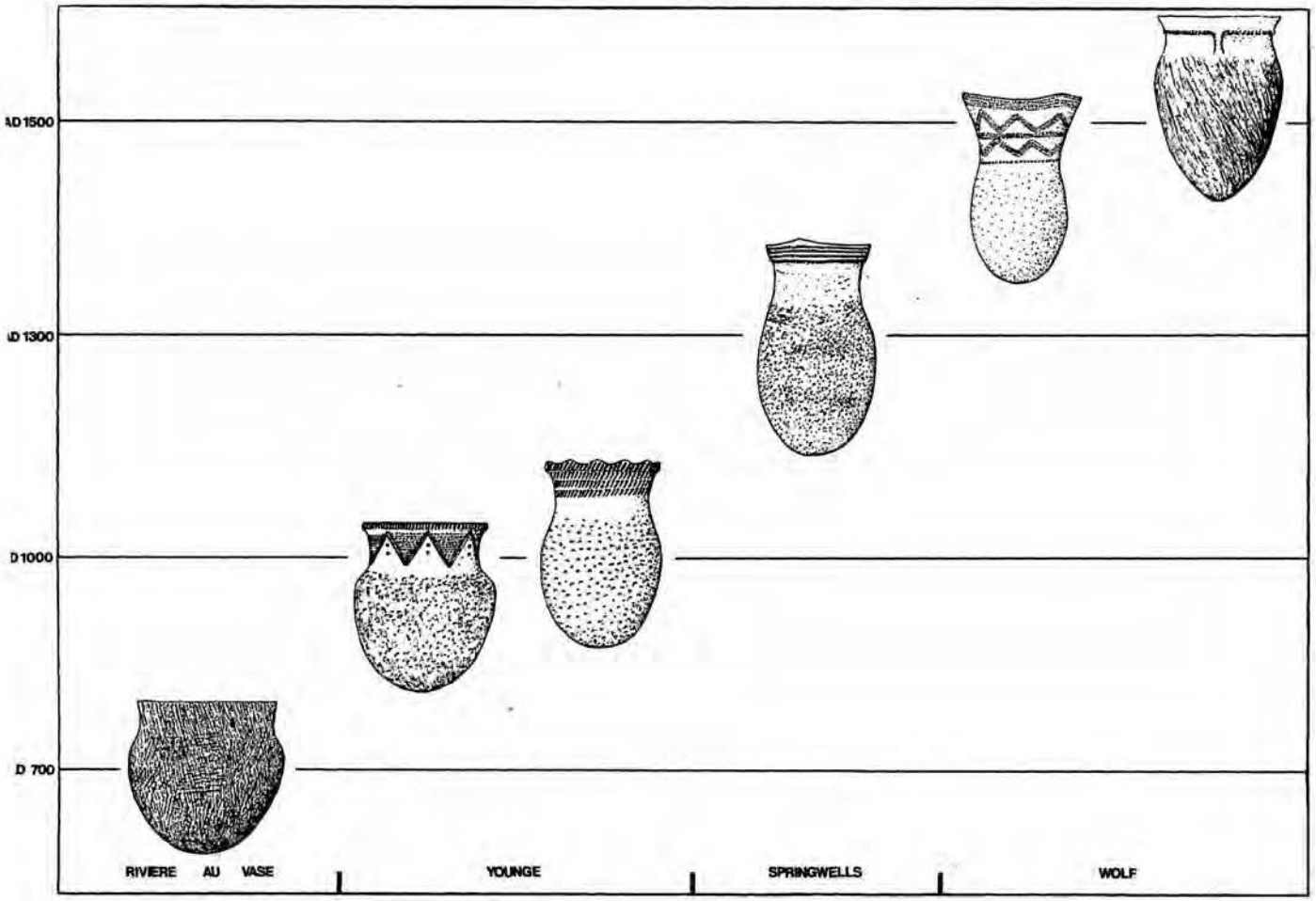


FIGURE 7.2: Ceramic Vessel Form Styles Through the Western Basin Late Woodland. Illustrations by Ian Kenyon.

are known at least as far north as Saginaw Bay (Halsey 1976), and are the distinctive early Late Woodland ceramic form for southwestern Michigan (Fitting 1968a; Brashler 1981; Lovis 1990; see also Kingsley 1989). Wayne wares are also relatively common in northwestern Ohio, but are rarely found in single component sites (Stothers et al. 1979; M. Pratt 1981).

Over the mid to late stage of the Riviere au Vase Phase plain, exterior cordmarked vessels are gradually replaced by more elaborately decorated forms. Partially or completely smoothed over exterior rims and necks may first occur around A.D. 700, and become prevalent by the end of this phase. Early decorated vessels are distinguished by one or more horizontal bands of oblique tool impressions directly over the corded exterior surface of the rim. The most common decorative tool types are dentate and suture stamps, while cord-wrapped objects increase in frequency towards the end of this phase. Multiple bands of horizontal, linear tool impressions may also occur below obliques on the upper rim. Neck decoration, when it occurs, usually consists of vertical or diagonally descending bands of horizontal tool-impressed plaits over the corded surface (e.g. Figure 7.5)

Many of the earliest Riviere au Vase decorated vessels are associated with a single row of exterior punctates and interior bossing below the first band of obliques. Punctates are usually round, although linear "slash" examples

FIGURE 7.3: Early "Wayne-Ware-Like" Riviere au Vase Phase Vessels Documented from Point Pelee
Courtesy of David Keenlyside and the Canadian Museum of Civilization, Ottawa.

are also known. Interior punctate - exterior boss rims have been surface collected from the Parks site east of Thamesville, but it remains unclear if punctate orientations represent temporal trends. Low, rounded or pointed castellations are present and some rims have a scalloped (multiple castellated) appearance when the lip is deeply tool-impressed (Figure 7.6; see Fox 1985b: Figure 4.3). While punctation with bossing decreases towards the end of the Riviere au Vase Phase, castellations become increasingly common. Punctated and castellated examples have been recovered from the Couture (Fox 1985b), Fairfield Creek (Ferris 1989c), Indian Clearing (Stothers 1974d), and Van Hooste sites (Knight and Ramsden n.d.).

By A.D. 800 to 900 (the transitional period between the Riviere au Vase and Younge Phases), most vessels display completely smoothed rim and neck areas, with one or more horizontal bands of tool-impressed obliques on the rim exterior (see Figures 7.7 and 7.8). The same technique is most often repeated in an alternating oblique pattern on the lip and interior immediately below the lip (Keenlyside 1977:66; Murphy 1988a:96). Filled-in-triangles or diamonds also appear around this time, and seem associated with elongated, completely smoothed over necks and heavily cord-roughened or malleated vessel bodies, typical of the Younge Phase (see below). Plain cord-roughened vessels virtually disappear by the beginning of the Younge Phase.

FIGURE 7.4: A Wayne Ware Riviere au Vase Phase Vessel Section from Robson Road, Area B. A radiocarbon date of 960 ± 120 B.P. was obtained from material associated with this vessel although this is felt to be too late in time to adequately reflect the vessel's age.

Ceramic artifacts other than pottery vessels are rare on Riviere au Vase sites. Miniature pots are not known, and would be difficult to distinguish due to the variability inherent in the utilitarian vessel assemblage. Ceramic smoking pipe fragments are rare but have been reported from the Point Pelee components. The majority of elements recovered are smooth surfaced stem fragments with rectangular or round cross sections (Keenlyside 1977).

Lithic technology for the Riviere au Vase Phase reflects a well developed industry. Early projectile points are predominantly corner-notched, classified as Jack's Reef corner-notched point types (W. Ritchie 1971b:26-27). These points are thin, triangular to slightly ovate in outline, with deep corner notches and straight or slightly convex basal edges (Figure 7.9a-c). Point sizes average around 40 mm long and between 20 and 25 mm wide. Less well-made, side-notched forms with similar dimensions have also been documented which are similar to Port Maitland points (W. Ritchie 1971b:125; Figure 7.9d-f). Triangular Levanna-like points first appear during the last part of the Riviere au Vase Phase, and the earliest examples appear quite large, ranging up to 50 mm long (W. Ritchie 1971b:31). Lateral edges tend to be straight to slightly convex, and bases are often concave.

Large, thin pentagonal and ovate bifaces are also associated with this phase. Many are of Flint Ridge chalcedony or Upper Mercer chert, and likely represent raw material exchange with groups to the south or west. Exotic lithics are most visible as mortuary inclusions. The remaining lithic assemblage consists of well made, rectangular based and corner-notched drills; small bifacial and unifacial end scrapers, and the usual myriad of simple retouched flake tools. Ground stone implements are often difficult to assign specifically to the Riviere au Vase Phase but

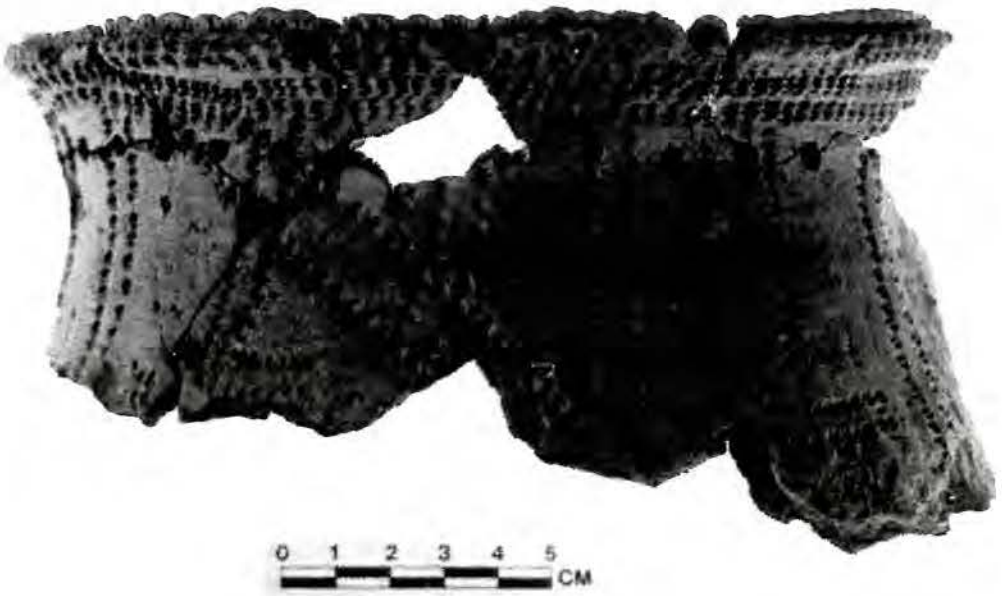


FIGURE 7.5: A Possible Mid-Period Riviere au Vase Phase Rim Section from Van Bemmel.

medium sized celts appear to be the norm, and various rectangular and circular chipped and ground slate knives are also represented. One of the more interesting characteristics of the ground stone assemblage is the abundance of rectangular or trapezoidal slate pendants. Several fragments have been collected from the Parks site, and these occur commonly with burials of this time (Halsey 1976).

Younge Phase

While Younge Phase and Springwells Phase ceramic distinctions are well-defined, this is not the case between Younge and Riviere au Vase Phase ceramics. In fact, there appears to be a continuous development of ceramic styles and trends through these two phases, without a single marker which can be easily used to separate one from the other. While a distinction has been made between Riviere au Vase and Younge Phases in the literature (Fitting 1965; Stothers and Pratt 1981; B. Redmond 1984), this distinction appears somewhat arbitrary. Furthermore, the evidence suggests that there are major regional variants in ceramic style from Ohio through to Ontario. Thus, what may be considered hallmarks of late Riviere au Vase Phase ceramics in the Maumee River valley of Ohio, may in fact reflect early Younge Phase ceramic styles in Ontario. As well, it has been acknowledged in the literature that Riviere au Vase-"like" rim forms and the occasional "isolated" Riviere-like vessel persists through the Younge Phase (Stothers and Pratt 1981:95; B. Redmond 1984:120-121). Consequently the key to identifying the difference between the Riviere au Vase and Younge Phases is said to be the ability to recognize the transitional nature of these ceramics (B. Redmond 1984:121). One must use frequencies of styles and forms in order to distinguish late Riviere assemblages from early Younge assemblages. In southwestern Ontario, however, there are no "pure" Riviere sites yet documented to provide a basis for such a frequency seriation.

While one can detect certain general changes to ceramic motifs and techniques over a broad period, the fact that Younge Phase vessels include a wide assortment of regionally distinct styles and that Riviere au Vase-"like" styles persist through the Younge Phase, suggests that these ceramic changes were gradual and subtle and limit our ability to define an arbitrary "cutoff" date which can be used to separate the two phases. Thus, the traditional notion

FIGURE 7.6: A Late Riviere au Vase Phase Vessel from the Fairfield Creek Site. Courtesy of Fairfield Historical Museum, Thamesville.

that the Younge Phase exists between A.D. 1000 and 1200 is difficult to support, since ceramic expression in the 1 or 2 centuries prior to A.D. 1000 blends well and continues into the beginning of the second millenium A.D. Given this fact, in this paper the Younge Phase is seen to begin somewhere between A.D. 800 and 900 with the advent of more complex and elaborate forms of decoration on ceramic vessels. The Younge Phase is seen to terminate around A.D. 1200 with the arrival of classic Springwells Phase ceramics.

FIGURE 7.7: Restored Transitional Period Vessel from the Minchell Site. Courtesy of Harry Bosveld and the Fort Malden Historical Museum, Amherstburg.

Generally, Younge Phase ceramics are characterized by a wide range of vessel forms, sizes and decorative motifs. This heterogeneity may be interpreted as being due to informal, not-fixed marital and residential patterns among these people or due to a high degree of experimentation on the part of Younge Phase potters. However, ceramic vessels appear to evolve during the A.D. 800-1200 period, becoming more elongated and larger than in earlier times. Vessel capacity increases to between 4-10 liters (Stothers and Pratt 1981:95), with at least one vessel from the Bruner-Colasanti site having an estimated capacity of 15 liters (Lennox 1982:30). Generally, these elongated vessels are characterized by flared or even everted rims, long necks with only minor constriction, and shoulders which tend to vary from slightly rounded to extremely pronounced, while bases are round or flattened (Fox 1982a: Figures 3 & 4, 1984: Figure 4; I. Kenyon et al. 1988: Figure 13; Kidd 1954: Figures 8 & 9; Lennox 1982:

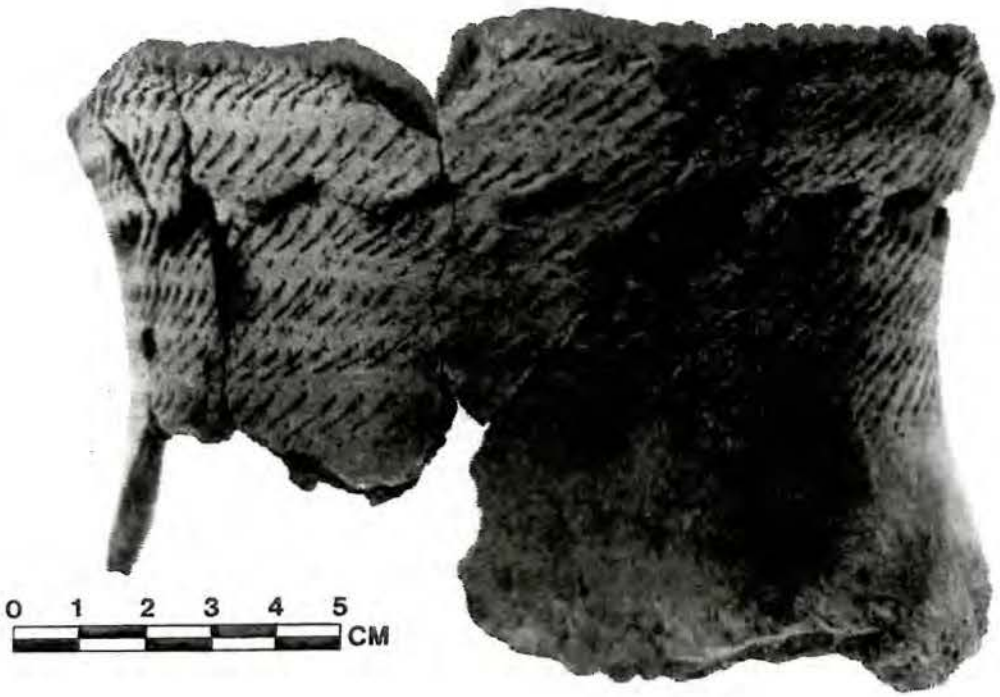


FIGURE 7.8: Possible Transitional Period Rim Section from the Dymock site. An acceptable radiocarbon date of 1030 ± 80 B.P. was obtained from material associated with this vessel.

Figures 20-26; P. Reid 1981: Plates 20 & 21, 1982: Plate 1). There appears to be some variation in this form, for example a reconstructed vessel from the Bruner-Colasanti site with a relatively short neck and sharp shoulder was found with a pot more characteristic of Younge Phase vessel forms (Lennox 1982: Figure 20). This increasingly elongated form of vessel appears to be transitional from the more rounded earlier forms of the Riviere au Vase Phase to the more bag shaped form of the later Springwells and Wolf Phases (Figure 7.2). Therefore, more than any variation in ceramic technique or motif, the ability to distinguish Younge Phase ceramics from earlier Riviere au Vase Phase wares is most evident in vessel form changes.

B. Redmond (1984:122) and Stothers and Pratt (1981:85) have indicated that, during the Younge Phase, interior rim decoration diminishes in frequency. However, based on our analyses of site collections from southwestern Ontario, Younge Phase ceramics consistently show between 85 and 95% interior decoration. Yet, in line with Redmond's discussion, interior decoration is simple, consisting of one or occasionally two rows of obliques or, less frequently, horizontal lines. These are usually made by a tool impression or incision and generally are similar to the dominant tool used on the exterior of the vessel. Interior punctates occur on less than 5% of the Younge Phase ceramics reviewed for this study. Lips are also generally decorated with a row of impressions. They also tend to be either flat (60-80%) or rounded (15-30%) in profile. Only rarely are lips pinched (0-10%).

Most Younge Phase rim profiles tend to be slightly flaring to almost everted, with a minor percentage (15-30%) being splayed. Castellations occur on 30-50% of vessels during the Younge Phase, always as multiple castellations (Figures 7.10 & 7.11). A minority of rims actually appear to be scalloped, formed by pressing either a finger or thick tool repeatedly along the rim prior to the application of decoration (e.g. Figure 7.10b).

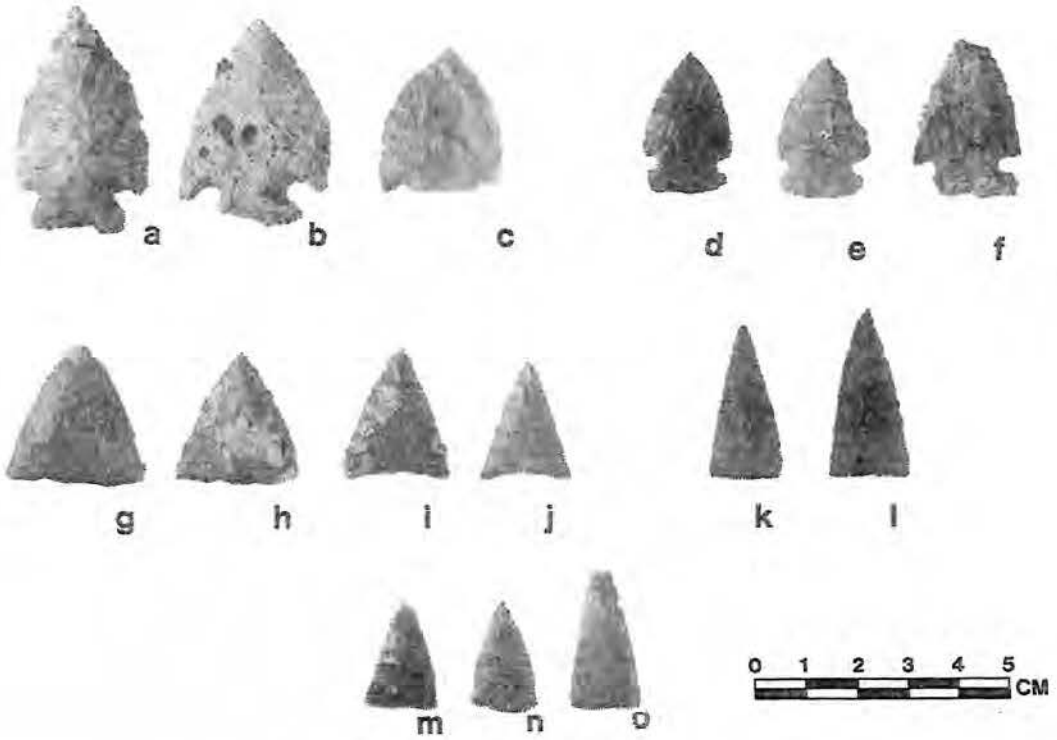
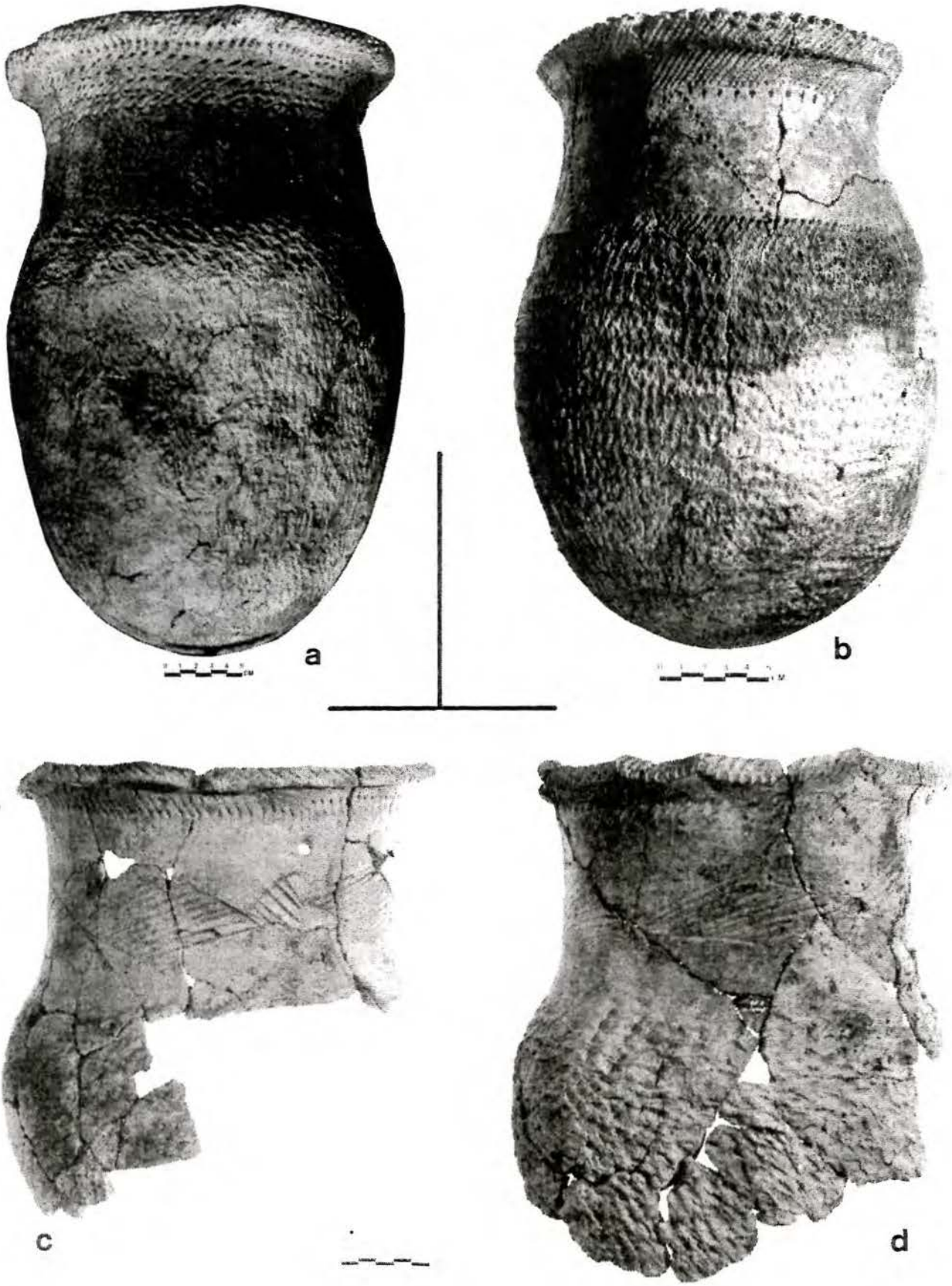


FIGURE 7.9: Late Woodland Projectile Point Types for the Western Basin Tradition. A-C: Jack's Reef Corner-Notched (Van Bemmel); D-F: Port Maitland Side-Notched (D:Simons; E: Cherry Lane; F: Robson Road); G-O: Levanna-like to Madison-like Triangular (G-K: Van Bemmel; L: Liahn I; M-O: Weiser). Access to the Weiser points provided by David Crundwell.

While vessels from the Younge Phase are almost always collarless, increasingly during this phase rims develop what have been referred to as "incipient" collars (Stothers and Pratt 1981:95), or "thickened" rims (Ferris 1989b: Figure 9a; Fitting 1965:14). These are distinct from the well pronounced collars of the succeeding Springwells Phase, tending to be a portion of the rim that has been rolled or folded over onto the exterior (Figure 7.12). Occasionally, a separate strip of clay was applied directly to the top of a vessel's neck to form the rim (Figure 7.12c).

One of the distinguishing characteristics of Younge Phase vessels is the use of the extended neck as a large "canvas." Elaborate and varied decorative motifs and styles are used, and it is not uncommon for a decorative motif to change across a vessel (Fox 1982a:6). It has been argued that during the Younge Phase elaborate decoration decreases in frequency, and is replaced by simple motifs and even plain necks (Stothers and Pratt 1981:95; B. Redmond 1984:121). However, with the possible exception of the last hundred years of this phase, southwestern Ontario Younge Phase ceramic decoration remains elaborate, being characterized by the full use of the neck by the potter. In fact, since we feel that the Younge Phase began somewhere between A.D. 800 and 900, elaborate decoration can be pointed to as a defining characteristic of this phase, distinguishing it from the simpler decorative trends of the Riviere au Vase Phase.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b
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d

FIGURE 7.10: Younge Phase Ceramic Vessels. A-B: Bruner-Colasanti, photo courtesy of Paul Lennox and the Ontario Ministry of Transportation (an acceptable date of 810 ± 75 B.P. was obtained on material associated with vessel "A"); C-D: Cherry Lane, access to vessel 7.10c provided by Peter Reid and the University of Windsor (an acceptable date of 850 ± 75 B.P. was associated with vessel "C" while vessel "D" was associated with a date of 950 ± 70 B.P.).

Rims and necks tend to be smoothed over for the application of decoration, although cord-marking and/or smoothed over cord can occur on necks and rims, and sometimes may be used as decoration (Lennox 1982:38). Decoration on the exterior of Younge Phase vessels can be divided into "Zones." In all, there are three such zones, associated with the rim, neck and shoulder portions of the vessel. The Rim Zone consists of one or more rows of an almost always oblique pattern (Figures 7.10 & 7.11). Vertical patterns are not common, and horizontal patterns are rare. The Rim Zone extends from below the lip or, when folded over, the incipient collar, to a point down the neck where the Neck Zone begins. The length of the Rim Zone is not necessarily confined to the rim area as defined by vessel profile, and can vary from a single, small oblique row, to two or more rows extending down along a good third of the neck's length. Thus, by treating exterior decoration on Younge Phase vessels as zones, one can avoid the rather arbitrary task of defining the end of a rim and beginning of a neck, especially when rims are uncollared and necks tend to be long, flat and unconstricted.

The most common decorative technique employed on Rim Zones is the use of regular tool impressions, also known as linear stamping. In fact, this technique has been referred to as a "hallmark" of the Younge Phase (B. Redmond 1984:121). With the inclusion of other forms of stamping (i.e. dentate, stafford, cord-wrapped stick), this technique represents 80 to 90% of the method of decoration applied to Rim Zones on Younge Phase ceramic assemblages examined for this study. Most common of the various stamping techniques is tool stamping, including a distinctive variant, where the instrument is impressed into the wet clay on an angle, leaving a deep impression at the point of the tool (Figure 7.10a). Another common technique involves impressing the tip of a narrow tool, leaving a small notch. Dentate stamping is also fairly common (Figure 7.11b), followed by cord-wrapped stick impressing and stafford stamping (a crescent-shaped impression thought to be caused by impressing the end of reeds into wet clay; see J. Wright 1966:118). Occasionally (10-20%), the Rim Zone is marked by a single row of punctates, occurring mid-way down this zone. Punctates on Younge Phase vessels tend to be either shallow, circular impressions or coarse, downward-slanted, oval shaped impressions (Figure 7.11b). Unlike those of the earlier Riviere Phase, punctates on Younge Phase vessels do not usually leave interior bosses.

The Neck Zone generally contains the dominant decorative expression on a given vessel. Usually the Rim Zone motif is excluded from the Neck Zone, although the occasional vessel will exhibit the incorporation of the rim motif into the dominant neck motif (I. Kenyon et al. 1988: Figure 9). Of vessels recovered from sites that have neck portions restored, plain necks account for 10% to 25% of the dominant zone motif, although this may simply represent a fragmentary, plain portion of a decorated neck. The most common motif on necks are incised triangles and/or diamonds, which appear to be a "hallmark" of Younge Phase vessels, appearing in an almost infinite number of variations. These triangles/diamonds usually appear as alternating plain and filled-in areas around the width of the vessel, although there are exceptions such as examples with all the diamonds or triangles filled-in with decoration (e.g. with incised lines), or alternatively void of any decoration. Triangles and diamonds can be simple, or bordered by deep incised lines or rows of punctates, or divided into sections (Figures 7.10 & 7.11). Other decorative motifs which appear on Neck Zones include oblique rows of plaits (normally stamped), although this appears to be a motif more common in the Riviere au Vase Phase. Also common on vessels are several rows of oblique stamped impressions. Combinations of these basic themes can also be incorporated together on one vessel.

Neck Zone decorative technique is dominated by the use of incised lines. When diamonds or triangles are filled, it is usually done by incising, either haphazardly, or in an even, regular pattern of oblique or horizontal lines. Occasionally, incised lines are applied in a push-pull manner. Lines of dentate stamp are also used to fill diamonds and triangles. Often accompanying triangles and diamonds are punctates, appearing either as a single horizontal row

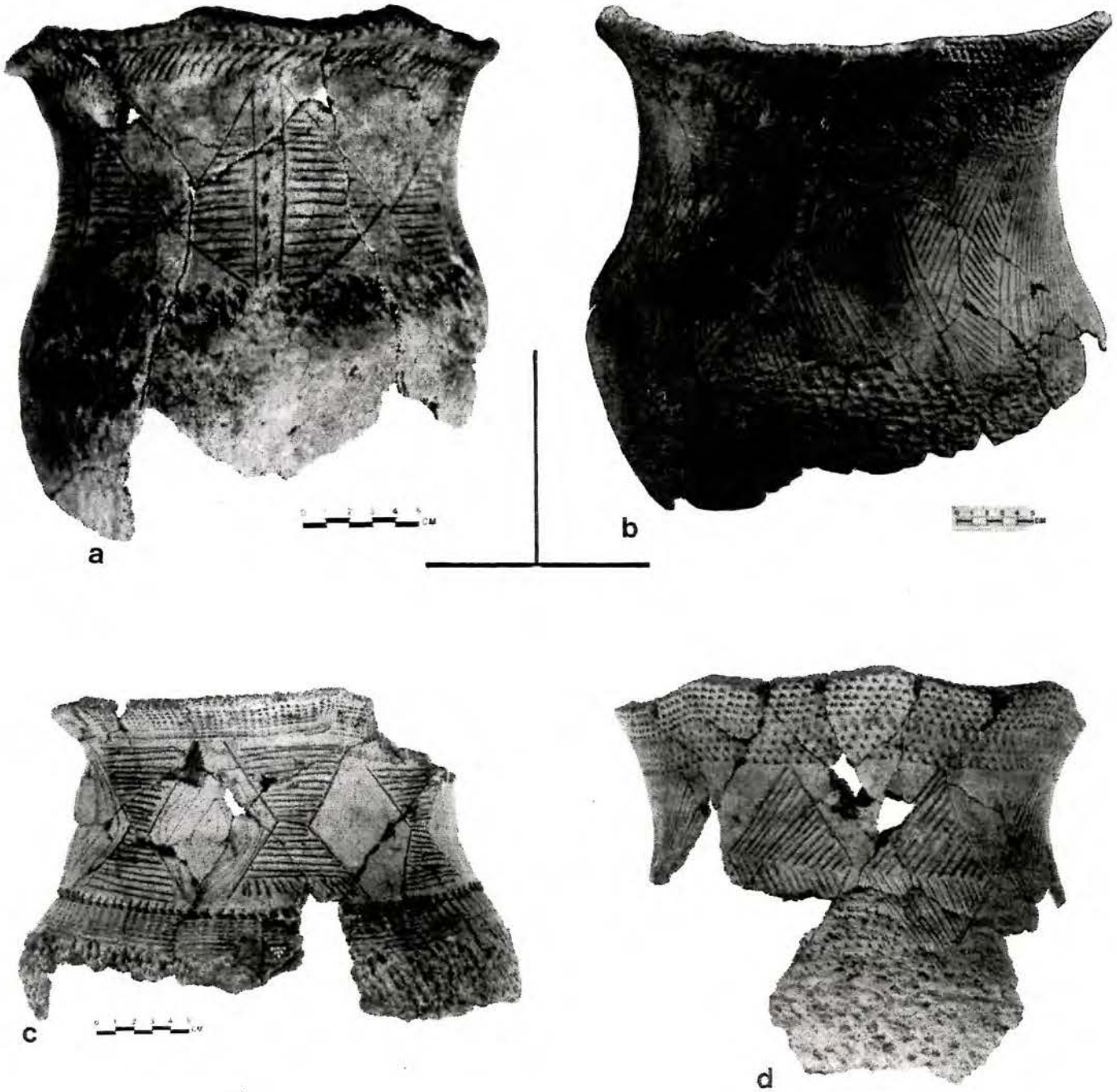
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FIGURE 7.11: Younge Phase Ceramic Vessel Sections. A: Bruner-Colasanti, photo courtesy of Paul Lennox and the Ontario Ministry of Transportation (an acceptable date of 855 ± 75 B.P. was obtained on material associated with this vessel); B: Krieger, access to vessel provided by Chatham-Kent Historical Museum; C-D: Dymock site (both vessels were associated with a date of 910 ± 80 B.P.).

encircling the pot midway down the Neck Zone, or as a border decoration, following the outline of the dominant motif. Stamping also occurs, and is the common technique used in forming plaits and rows of obliques. Depending on decorative elaboration, several techniques can be used to make the motif.

The final zone is limited to decoration appearing on the shoulder of the vessel. Shoulder decoration, with few exceptions, is modest to non-existent. In fact, 65-75% of vessels from collections examined have no shoulder decoration. Rather the shoulder is defined by the end of the smoothed neck area, and the beginning of the cord-marked body. When decoration does occur on the Shoulder Zone, it tends to consist of a row or two of either horizontal or oblique tool impressions (Figures 7.10b & 7.11a, c).

Below the three decorative zones is the body of the vessel, which is usually between rounded and bag-shaped in form. Predominant body treatment consists of cordmarking (Figures 7.10 & 7.11). Generally, over 80% of body sherds from a Younge Phase site are found to be cord-marked, with the remaining either smoothed-over cord or plain. Examinations of complete vessels suggest that the plain and smoothed-over body portions are the result of over-extended neck wiping (Figure 7.11d), or caused by resting or leaning a wet, unfired vessel on a hard surface (Lennox 1982:32). Cord-marking on Younge Phase vessels exhibits a mottled, blotchy look, different in appearance from the cord-marking on earlier Riviere au Vase Phase ceramics which are marked by well-defined thin lines. It has been suggested that this difference is due to different paddle covers. Earlier potters are thought to have used paddles that were truly cord-wrapped, creating thin, vertical lines on the body (known as cord-malleated; see J. Wright 1966:30). By the early Younge Phase or later part of the Riviere au Vase Phase, paddles appear covered with a twined fabric, accounting for the more mottled appearance (known as fabric impressed; see J. Wright 1966:29-30).

So-called "juvenile" vessels occur on Younge Phase sites, usually taking the form of decorated or undecorated "thumb" pots. However, another form of small vessel, quite distinct from juvenile forms, also occurs on Western Basin sites, and appears to be particularly common during the Younge Phase (Figure 7.13; see also Kidd 1954: Figure 12.3). These miniature vessels often exhibit good craftsmanship, and detailed attention to decoration and vessel shape. As well, several examples are covered with carbonized food remains, suggesting a utilitarian use. Since their capacity is often less than a liter, it may be that such vessels were intended to hold an individual serving of food.

Pipes occur less frequently on Younge Phase sites than on contemporary Ontario Iroquoian ones. The few specimens found tend to be elbow-shaped, or right angled (Ferris 1989b: Figure 9.b-c; Kidd 1954: Figure 14; Lennox 1982: Figure 33; P. Reid 1981: Plate 17 and 18; 1982: Plate 26. see also Greenman 1937: Plate 21 and 22; Fitting 1965: Plate 31 and 32). Stems are plano-convex in form, or D-shaped, with the flat side up, while the mouth end is occasionally tapered. Pipe bowls are generally high, cylindrical, and can be slightly collared (Figure 7.14). The most common decorative technique on bowls during the Younge Phase is the application of rows of tiny, round punctates, although cord roughening and incising also occur.

The remaining Younge Phase assemblage is unspectacular. Lithic material reflects the use of locally available pebble cherts from secondary deposits (Ferris 1989b:13; Fox 1982a:6; I. Kenyon et al. 1988; Lennox 1982:19; P. Reid 1981:16, 1982:30). Indeed, the use of these sources may suggest that lithic trading was not an important aspect of exchange, and that contact with groups beyond the normal range of a band in a given year was infrequent, or too irregular to depend on exotic sources of chert. The reliance on poor quality chert may also explain why lithic tools at most Younge Phase sites are few in number and normally well-used, and why evidence of bi-polar flaking is so common.

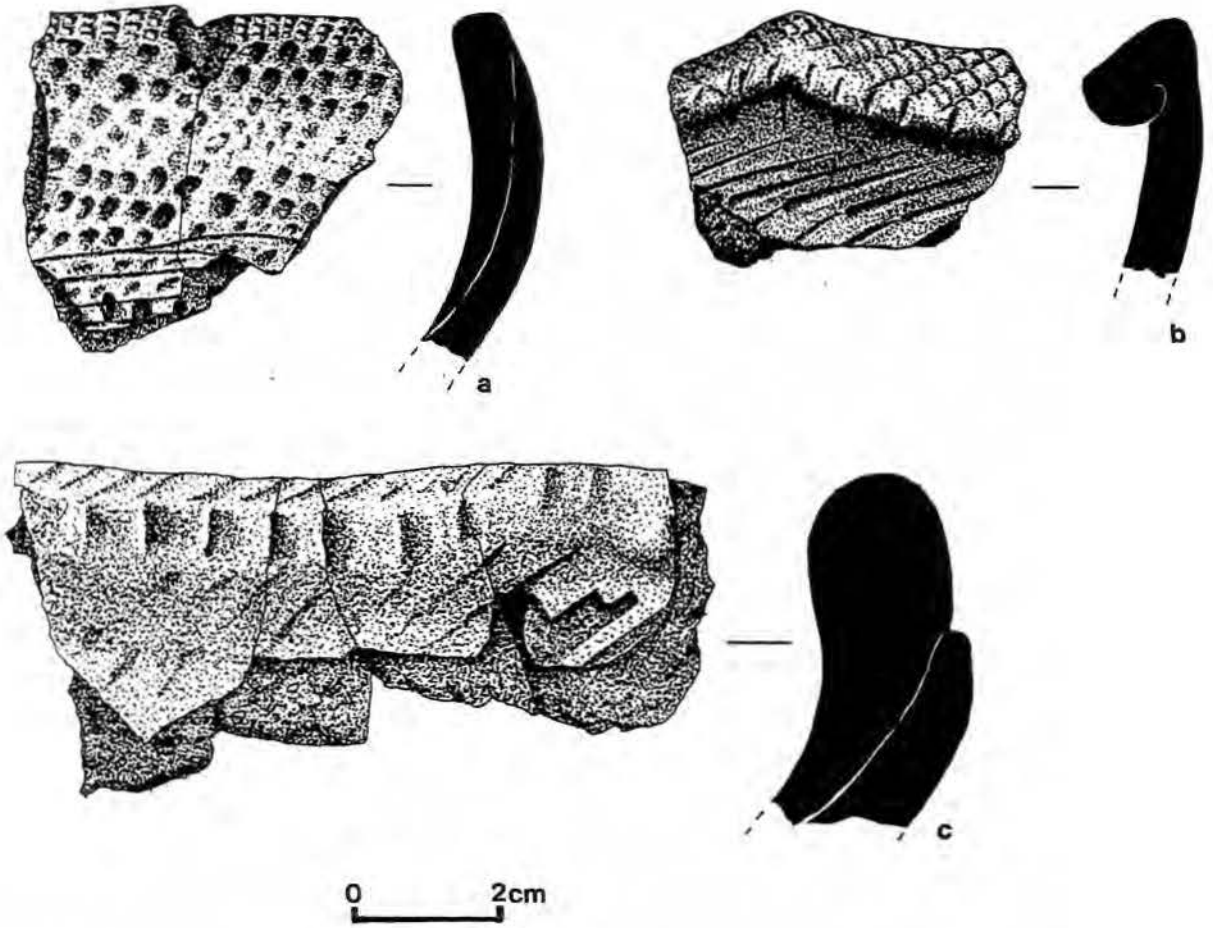

FIGURE 7.12: Younge Phase Rim Segments Exhibiting "Incipient Collars". A: Van Bemmel site; B: Muriel Ryersee site, access to rim provided by Ron Trider; C: Robson Road site (associated with a date of 850 ± 90). Illustrations by Nick Adams.

Projectile points found on Younge Phase sites are characteristic of the general early Late Woodland pattern for southern Ontario. The predominant point type is a Levanna-like triangular form (Figure 7.9g-k). At the Van Bemmel site, over fifty scrapers were discovered during the 1987 excavations of the main Younge Phase occupation (Ferris 1989b). These tend to be large endscrapers made from a thick primary flake, and exhibit a hafted element and perhaps a corner spur (Figure 7.15). The number of scrapers from Van Bemmel is a striking contrast to the two found at Bruner-Colasanti (Lennox 1982:14), or the one and six from Robson Road (P. Reid 1982:32) and Cherry Lane (P. Reid 1981:18), respectively.

Ground stone tools found on Younge Phase sites include celts, adzes, and possibly slate gorgets. At the Van Bemmel site a crescent-shaped slate knife, or "inverted" ulu, was found (Ferris 1989b), similar to one found on the contemporaneous Glen Meyer Calvert Site (Prevec 1984:6, Figure 3.2). Also present are hammer and anvil stones, mano and metates, as well as what appear to be hammerstones with pockets of pecking occurring on their sides. These have been interpreted as "nutting stones" (Lennox 1982:25), used to break open nuts. Alternatively, they may have served as platforms for bipolar knapping. Metates, or grinding stones, found on Younge Phase sites exhibit evidence of a circular grinding motion, with a deep groove usually encircling a raised, central portion of the stone.

FIGURE 7.13: Younge Phase Miniature Vessels from the Dymock Site.

Finally, bone tools from Younge Phase sites are consistent with those found across southern Ontario during the early Late Woodland. This material includes awls, needles, flakers and beads (Fox 1982b:7-9; Lennox 1982:43).

Springwells Phase

In the late 12th or early 13 century A.D., several distinctive ceramic decorative styles rapidly diffused over the Western Basin Tradition area of southwestern Ontario and southeastern Michigan, marking the initiation of the Springwells Phase. The heterogeneity of earlier Western Basin ceramic decorative motifs continued into this phase but the dramatic appearance of new innovations in ceramic design over a widespread area suggests that intensive regional interaction existed during this phase. Indeed, similar trends in ceramic decoration are also seen in the contemporaneous Uren-Middleport Phases of the Ontario Iroquoian Tradition (see Dodd et al.: this volume), and the dominant trait of this period -- horizontal linear design on collars -- is an innovation which appears throughout much of the Northeast at this time.

In general, vessel rims of the Springwells Phase are primarily, but not exclusively, collared and castellated and characterized by a number of horizontal, oblique and cordmarked rim motifs. During this phase, collars are well defined and vessel necks become increasingly elongated, cylindrical, and only slightly constricted, merging into the body of the vessel without a distinct neck-shoulder junction (Figures 7.2 & 7.16). Vessel bodies also become longer with rounded or semi-conoidal bases. Ceramic pots reach their largest capacity (ca. 40 liters), and the peculiar "bag shaped" form characteristic of this period continues to characterize Western Basin ceramic vessels well into the succeeding Wolf Phase.

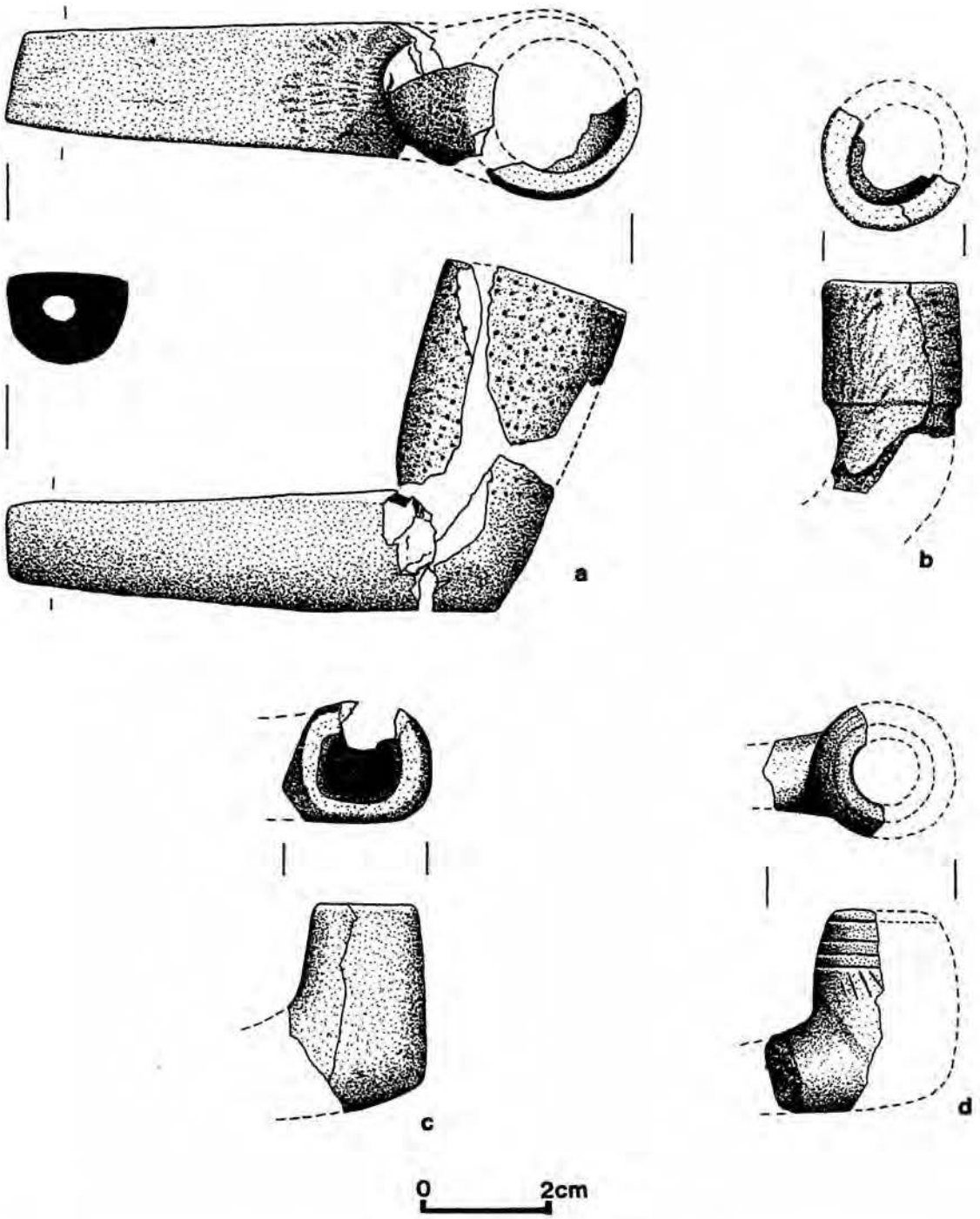

FIGURE 7.14: Some Western Basin Tradition Pipes. A-C: Younge Phase; D: Wolf Phase (A: artistically reconstructed pipe from the Dymock site; B & C: bowl fragments from the Van Bemmel site; D: pipe bowl from the Parker Earthworks, access provided by Bob Calvert). Illustrations by Nick Adams.

FIGURE 7.15: End Scrapers from the Van Bemmel Site.

There is a trend towards decreasing frequencies of interior and lip decoration during the Springwells Phase, and for the first time in the Western Basin sequence, these areas of the vessel may be completely undecorated. When interior decoration occurs, it may still be a repetition of the exterior decorative motif. However, sometimes present are various oblique stamps and interrupted linear horizontals, which may not be similar to the exterior pattern. Rim lips on Springwells Phase vessels are generally flattened and nearly square in profile. Decoration often consists of a single line of interrupted linear or linear cord impressions encircling the lip, although tool impressed obliques, punctates and cord-roughened lip surfaces also occur. (Ferris and Crundwell 1988:11; I. Kenyon 1988:16; I. Kenyon et al. 1988:14; Murphy 1987:21-22).

One of the most prominent traits of Springwells Phase vessels is the presence of a true collar on the rim exterior. Indeed, exceptionally large vessels may have pronounced collars nearing 100 mm in height (I. Kenyon et al. 1988: Figure 10.1). One of the distinctive ceramic decorative motifs which is apparently introduced with the earliest collared vessels and immediately identifies Springwells Phase assemblages is a series of horizontal rows of linear impressions paralleling the rim (Figure 7.17g-h). This motif is usually produced in a 'drag-stamp' or 'push-pull' fashion which results in a pattern usually referred to as interrupted linear (Fitting 1965:156-157). The Springwells interrupted linear motif is most often produced with a narrow, blunt stylus, although other tool forms used to produce the pattern include cord-wrapped tool impressions, corded paddle edges, irregular suture impressions, linear cord-impressing, and punctates (I. Kenyon 1988:15; Lennox 1982: Figures 27.2, 28.1, 28.3, 28.5; P. Reid 1983a: Figure 2; see also Figures 7.16 & 7.18a). Secondary decoration on the lower edge or directly below the collar usually consists of a band of short tool-impressed obliques. The remainder of the neck may be smoothed plain, or as is often the case with interrupted linear vessels, the body surface treatment extends up the neck to just below the collar area (Figure 7.16).

FIGURE 7.16: Springwells Phase Vessel Section from the Dick Site. Associated with a radiocarbon date of 780 ± 100 B.P. Access to vessel provided by Peter Reid and the University of Windsor.

Along with the interrupted linear rimsherds, a number of other decorative motifs are also characteristic of the Springwells Phase. A distinctive, collared rim decorative form referred to as "Springwells Net Impressed" by Fitting (1965:141) is a variable type incorporating several styles including cord roughening and a complex "C" shaped stamp (Figure 7.17b). The impressions rarely appear to be the result of a net or other fabric and the term net is thus somewhat misleading (Krakker 1983:153). Most cord roughened collars display vertical cordmarking which varies from quite coarse (I. Kenyon et al. 1988; Lennox et al. 1989), to very fine, barely discernible impressions (Murphy 1989; Figure 7.17c). These cordmarks occasionally overlap, often giving rim sections a woven or net-like appearance.

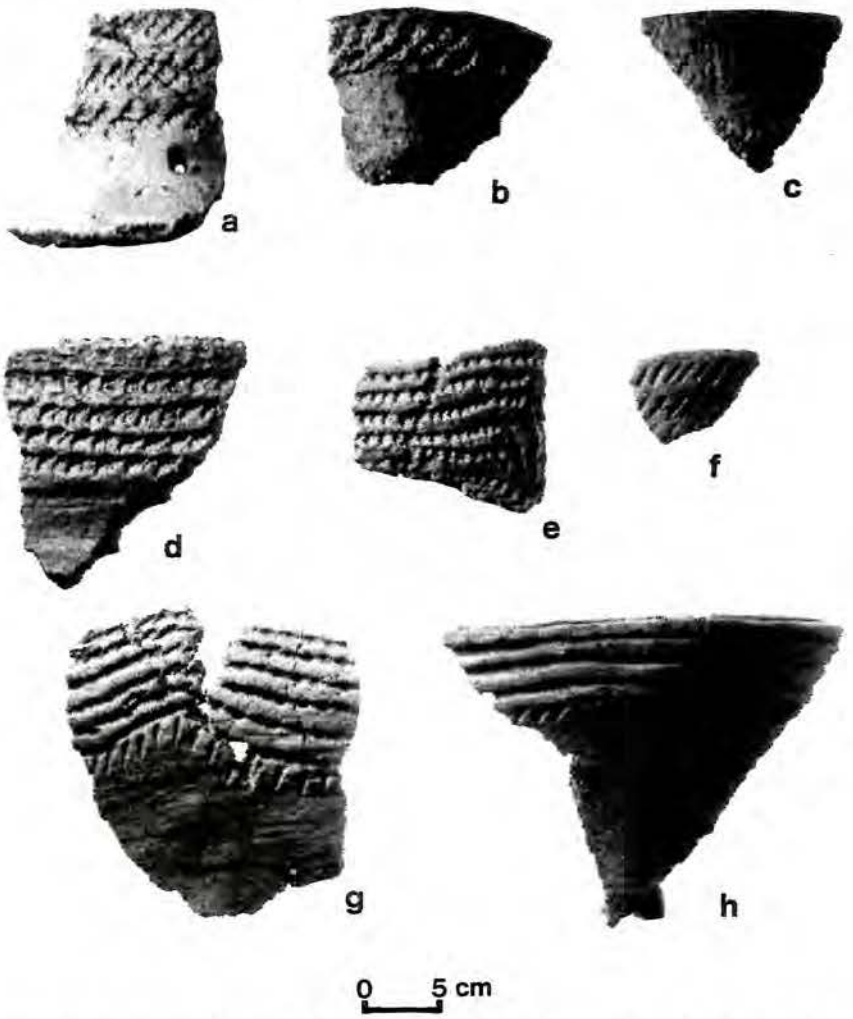

FIGURE 7.17: Common Springwells Phase Rim Types from Southwestern Ontario. A, C, H: Sherman; B, D-F: Robson Road (Specimens E and F are associated with a date of 600 ± 70 B.P.); G: Macklin.

Linear cord-impressed decorative motifs also occur during this phase, the earliest examples representing a variation on the interrupted linear decoration typical for collared vessels (Fitting 1965: Plate XV). This motif was accomplished by applying a string of twisted cord directly onto the vessel wall (Figure 7.18a,d). It appears that later in the phase linear cord impressing increases in frequency and may be applied in a variety of motifs, such as opposed obliques and obliques over horizontals on collarless vessels (P. Reid 1983a).

Tool impressed oblique decoration continues to be present throughout the Springwells Phase (e.g. Figure 7.17a,d,f, 7.18b,f). This style of vessel likely reflects the direction ceramic trends take towards the end of the Springwells Phase, during which time horizontal linear motifs are largely replaced by more elaborately decorated oblique tool-impressed rims. These appear closely related to contemporaneous Mixter wares of northern Ohio between the Maumee River and Cleveland (Shane 1967).

Mixter wares in southwestern Ontario are thought to span the transition from the Springwells to Wolf Phase. However, in northcentral and northwestern Ohio (and possibly on Pelee Island), these wares are thought to follow the end of the Younge Phase in place of Springwells-like ceramics. Thus, the innovation of Mixter wares is believed

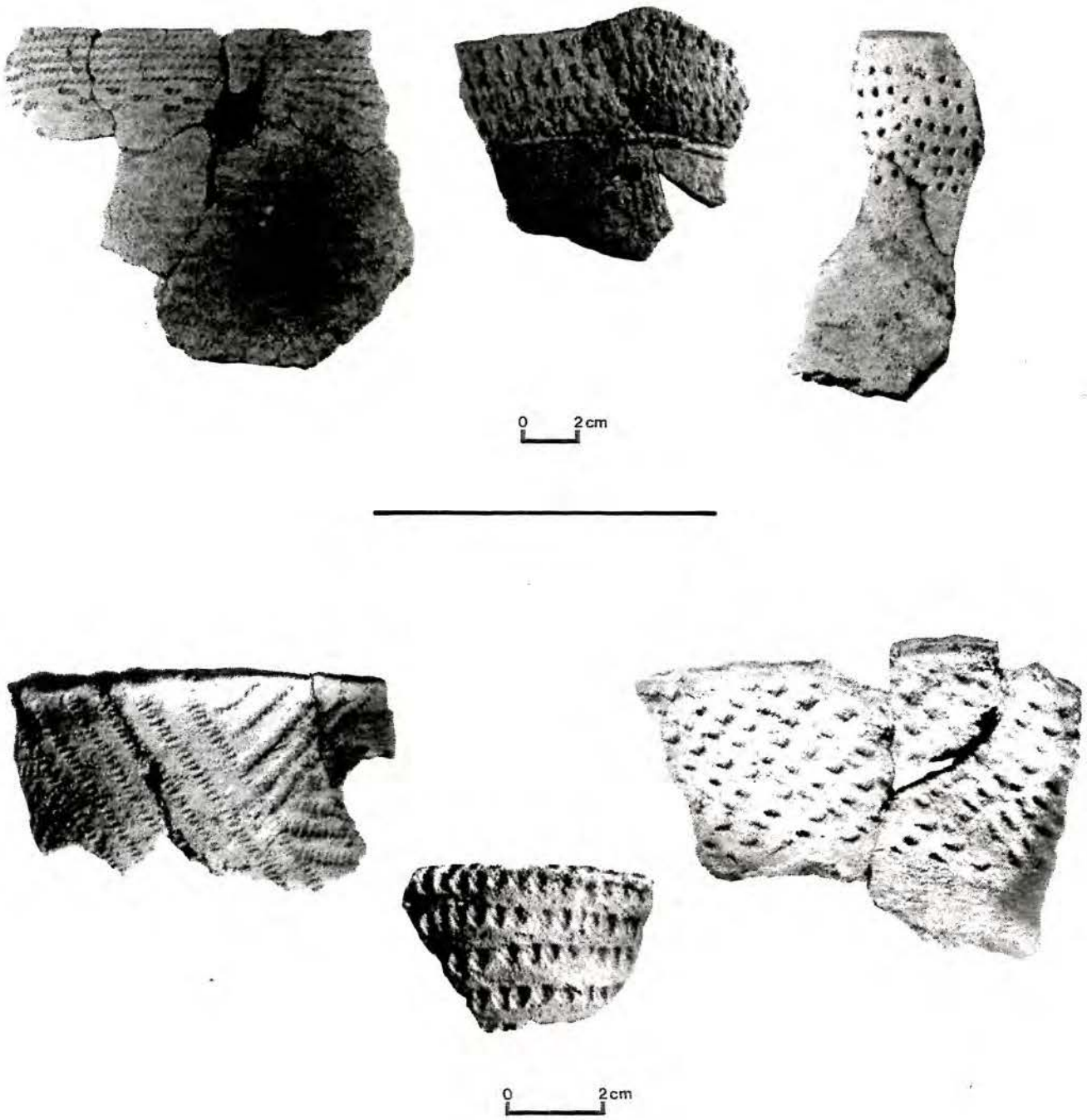

FIGURE 7.18: Late Springwells Phase Rim Sherds. A-C: Caron site; D-F: Lucier-E.C. Row. Caron site photos courtesy of Peter Reid and the University of Windsor. Lucier-E.C. Row courtesy of Paul Lennox and Ontario Ministry of Transportation.

FIGURE 7.19: Mixter Dentate Rim from the Caron Site. Photo provided by Peter Reid and the University of Windsor.

to eventually spread into southwestern Ontario and replace Springwells-like wares during the ca. A.D. 1350-1400 period. Mixter wares in Ohio are either Mixter dentate or tool-impressed, and are characterized by complex motifs involving several linear or undulating bands of dentate or tool-impressed stamp impressions on collarless or slightly collared and flared rims (Figures 7.19 & 7.20). Impressions usually extend in broad bands from the lip down to the mid-neck area, while the remainder of the vessel body is similar to Springwells vessel form and surface treatment (Figure 7.21). The appearance of Mixter wares in northwestern and northcentral Ohio is thought to reflect Mississippian influences on local groups (Bowen 1980; Brose 1978b and personal communications; Shane 1967).

Mixter vessels are known in southwestern Ontario from sites in the Leamington and Windsor areas, and on the Dover prairie east of Lake St. Clair (Lennox n.d.b; P. Reid 1983a; P. Wright 1976). The Lucier-E.C. Row site near Windsor is particularly important, as vessels from this site incorporate a wide variety of linear and oblique decorative forms (Lennox n.d.b; P. Wright 1976; Figure 7.18). This includes three examples of collared vessels, and three collarless vessels exhibiting opposed, oblique cord-wrapped tool impressions. Also noted are vessels displaying linear and oblique bands of blunt tool and dentate impressions; incised obliques bracketing punctates; and a few examples of completely smoothed over, plain rims. As well, one rim section displays undulating incised lines around the rim and upper neck, unusual for the Springwells Phase, but certainly foreshadowing the dominant trend of the later Wolf Phase. At the Caron site, located in Dover Township, a large segment of a typical Mixter Dentate vessel with a possible applique face at the apex of a rounded castellation has been recovered (Figure 7.19). Particularly around the castellation, where the bands of the tool impressions undulate, this vessel looks like an example of Parker Festooned, the hallmark of the succeeding early Wolf Phase. Associated ceramics from Caron also confirm a late Springwells-early Wolf Phase designation for this assemblage (Figure 7.18).

While cord-marked bodies similar to those of the preceding Younge Phase still occur, particularly during the first part of the Springwells Phase (Knight and Ramsden n.d.; Lennox et al. 1989), this body treatment is largely superseded by several other, more variable techniques. Indeed, one treatment which appears relatively early in the

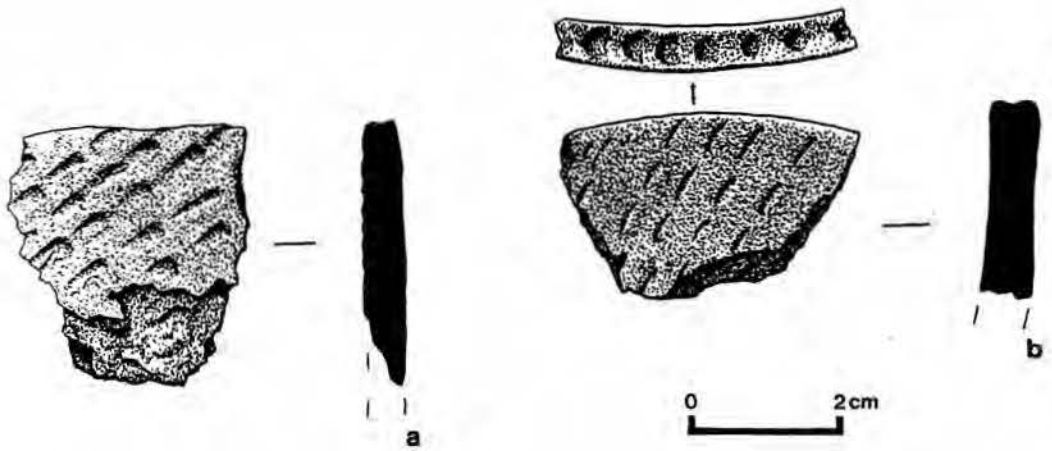

FIGURE 7.20: Mixter Rims from the Muriel Ryersee Site, Pelee Island. Access to specimens provided by Ron Trider. Illustrations by Nick Adams.

phase and appears to be a diagnostic trait of Springwells assemblages, is generally referred to as "roughening" (Greenman 1939; Fitting 1965), "self-slip" (I. Kenyon et al. 1988; Murphy 1987; P. Wright 1976), or "wiping" (Ferris and Crundwell 1988). The term "slip-roughening" is used here to clarify the process. Slip-roughening is caused by washing or wiping a vessel exterior with a wet sand-clay mix or "slip" resulting in a very distinctive stucco-like appearance (Figures 7.16 & 7.18a,f). On many slip-roughened vessels, the slip has partially flaked or worn away from the exterior surface, revealing the primary surface treatment beneath, such as cord-marking or ribbed paddling. The unconsolidated layers indicate that the slip was applied to either a mostly dried or hardened vessel, and may have been used as a method for smoothing exterior surface, or alternatively, to strengthen larger vessels and insure greater success during the firing process. This treatment is particularly common, if not the exclusive treatment, on the larger, bag shaped vessels of this phase (Ferris and Crundwell 1988:12; I. Kenyon 1988:15; Murphy 1987:22; P. Reid 1983a: 40).

Ribbed paddle body surfaces also appear during the Springwells Phase. Most ribbed paddling during this phase is coarse and irregular, with ridged impressions reminiscent of coarse fiber strips wrapped around a narrow paddle (Figure 7.17g, 7.18a). The ribbed edges are usually applied horizontally to the vessel and often extend from the vessel base to the decorated portion of the lower rim.

Vertical cord-marking, although a body treatment which becomes increasingly common during the Wolf Phase, does seem to appear late in the Springwells Phase. This cord-marking can be distinguished from earlier forms by evenly spaced, very fine cordmarks, with grooves and ridges spaced between 1 and 2 mm apart (e.g. Figure 7.18b).

Juvenile vessels are common on Springwells Phase sites and are most often plain and crude (Ferris and Crundwell 1988:12). Also, small or miniature vessels with randomly spaced punctates were recovered from the Bellamy site (Murphy 1987:23), and miniature rims from Depencier-Shaw exhibited incising combined with small punctates (Knight and Ramsden n.d.: 81). Springwells Phase smoking pipes show features which make them distinguishable from those of earlier times. Bowl shapes become more variable during this phase, with conical, barrel and more flared forms replacing the straight-sided, cylindrical styles typical of the Younge Phase (Knight and Ramsden n.d.; P. Reid 1983a; P. Wright 1976). Rows of small, circular punctates on the lip and bowl exterior may still be the

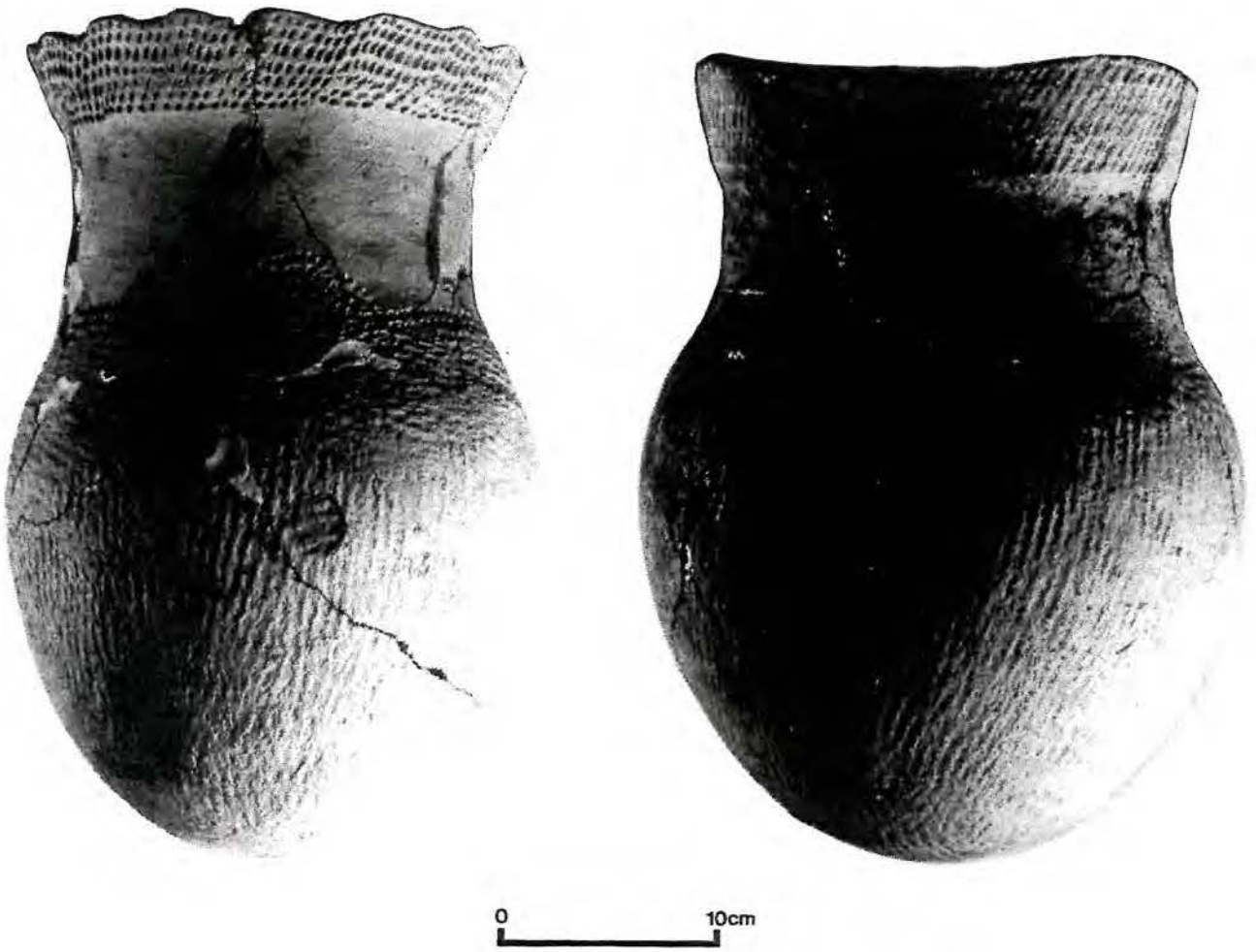

FIGURE 7.21: Mixter Vessels from the Libben Site, Northwestern Ohio. Courtesy of David Brose and the Cleveland Museum of Natural History.

most common decorative style early in the phase, however an increase in incised motifs is also apparent, which usually consists of one to three horizontal rings on the upper portion of the bowl (Knight and Ramsden n.d.: 23; P. Reid 1983a: 43).

Lastly, a significant number of fired clay lumps are found on Springwells Phase sites which display wood or fiber impressions and are generally considered to represent the remains of daub used in the construction of houses. Over 17 kg of fired clay lumps were recovered from Liahn I (I. Kenyon 1988:15), and a total of 51.2 grams of daub was recovered from a single pit at the Belanger site (Ferris and Crundwell 1988:13).

Springwells Phase lithic assemblages are similar in most respects to those of the Younge Phase, with few bifacial tools found on sites and a weak representation of intact chipped or ground stone tools. Raw material distributions use is also similar, the majority of chipped stone assemblages being made on locally obtained secondary chert pebbles. Cores of this material almost invariably display signs of bipolar reduction.

Projectile points continue to be Levanna-like triangular forms, although these appear to be narrower and move towards an isosceles-triangular shape (P. Reid 1983a:35; I. Kenyon 1988: Figure 10.5; see also Figure 7.9l). Smaller, side-notched points may be common on Springwells sites along the Thames River (Knight and Ramsden n.d.: 24), but rarely occur elsewhere.

Wolf Phase

The ca. A.D. 1400-1550 Wolf Phase, the last phase of the Western Basin Tradition in southwestern Ontario, is at present poorly documented. In fact, only four site collections are available for consideration. This drop in the frequency of known sites is due to a number of factors, not all of which are fully understood (see Wolf Phase settlement-subsistence below). Certainly part of the reason for a lack of data appears to be a westward realignment of Western Basin peoples in southwestern Ontario by ca. A.D. 1400, with the only known sites located along rivers bordering Michigan. Unfortunately, our knowledge of Wolf Phase occupations in the adjacent state of Michigan is as poor (Krakker 1983), although some recent efforts are beginning to address this gap (i.e. Zurel 1985).

Presently, the data from southwestern Ontario suggest that early Wolf Phase ceramic vessels develop from the elaborately decorated Mixter-like, tool-impressed forms of the Springwells-Wolf transition. Collared, interrupted linear motifs indicative of the Springwells Phase are largely abandoned by ca. A.D. 1400, although collarless, tool-impressed, linear cord-impressed, and cord-marked vessels continue to be made well into the Wolf Phase (e.g. Figure 7.23e).

The ceramic decorative motif which dominates the early Wolf Phase is known as Parker Festooned (T. Lee 1958; Fitting 1965; Krakker 1983), first noted on the Wolf site in Michigan (Greenman 1939) and at the Iroquoian Lawson site in London, Ontario (Wintemberg 1939). A large number of sherds representing this type were found at the Parker Earthwork site in Lambton County, prompting Lee (1958:16) to establish this pottery type. Parker Festooned is arguably the most ornamental pottery vessel style manufactured by Western Basin peoples, and this distinction may extend far beyond cultural borders. It is immediately recognizable within foreign assemblages of the corresponding period, appearing in greater frequencies than other Wolf Phase ceramic motifs on Iroquoian sites to the east (Keron 1981b; 1983; D. Smith: personal communication).

Parker Festooned vessels are large, usually castellated, and display a rim profile that flares outward from a constricted neck (Figure 7.22). Necks are very elongated or cylindrical, shoulders poorly developed, and bodies are long with rounded bases (Figure 7.2). Vessel decoration is distinguished by curvilinear "festooned" motifs on the vessel rim and neck area, while rim interiors and lip surfaces are generally smoothed plain. The festoons are produced by two methods. The first involves one to three undulating or zig-zagging narrow strips of clay applique, which may be plain or tool impressed. The second variant includes nearly identical motifs, but the applique strips are replaced by raised tool-impressed or dentate stamped ridges (T. Lee 1958:17; see Figures 7.22 & 7.23). Vertical, multi-toothed dentate stamps are often placed below the lip and between the appliques or ridges, and dragged stamped following the applique or ridges horizontally around the rim and neck area. Festooning often extends from the lip to low on the vessel neck, and the remaining body area is heavily slip-roughened.

It should be pointed out that there is no agreement among researchers regarding the date for the inception and duration of Parker Festooned. In particular, Stothers, Graves and Conway (1984) argued that the inception of Parker Festooned dates as much as 100 years earlier than A.D. 1400, and indeed, they argue that it disappears by about 1400. However, even though Parker Festooned may date as early as A.D. 1300 in Ohio, several lines of evidence suggest that dating Parker Festooned manifestations in southwestern Ontario only begin to appear at the beginning of the 15th century A.D. This evidence includes: 1) appearance of Parker Festooned vessels at late 15th or early 16th century Iroquoian sites such as Lawson (D.Smith: personal communication); 2) its demonstrable transition from the preceding Springwells Phase in southwestern Ontario, which itself is firmly dated to the end of the 14th century A.D.; 3) the fact that several radio-carbon dates from northwestern Ohio have dated Parker Festooned vessels to as late as the beginning of the 16th century A.D. (Bowen 1989, 1990); and 4), the fact that developments in northwestern Ohio generally appear to occur slightly earlier in time than in southwestern Ontario.

FIGURE 7.22: Early Wolf Phase Parker Festooned Vessel. Recovered by W.J. Wintemberg from the Windsor area. Courtesy of David Keenlyside and Canadian Museum of Civilization, Ottawa.

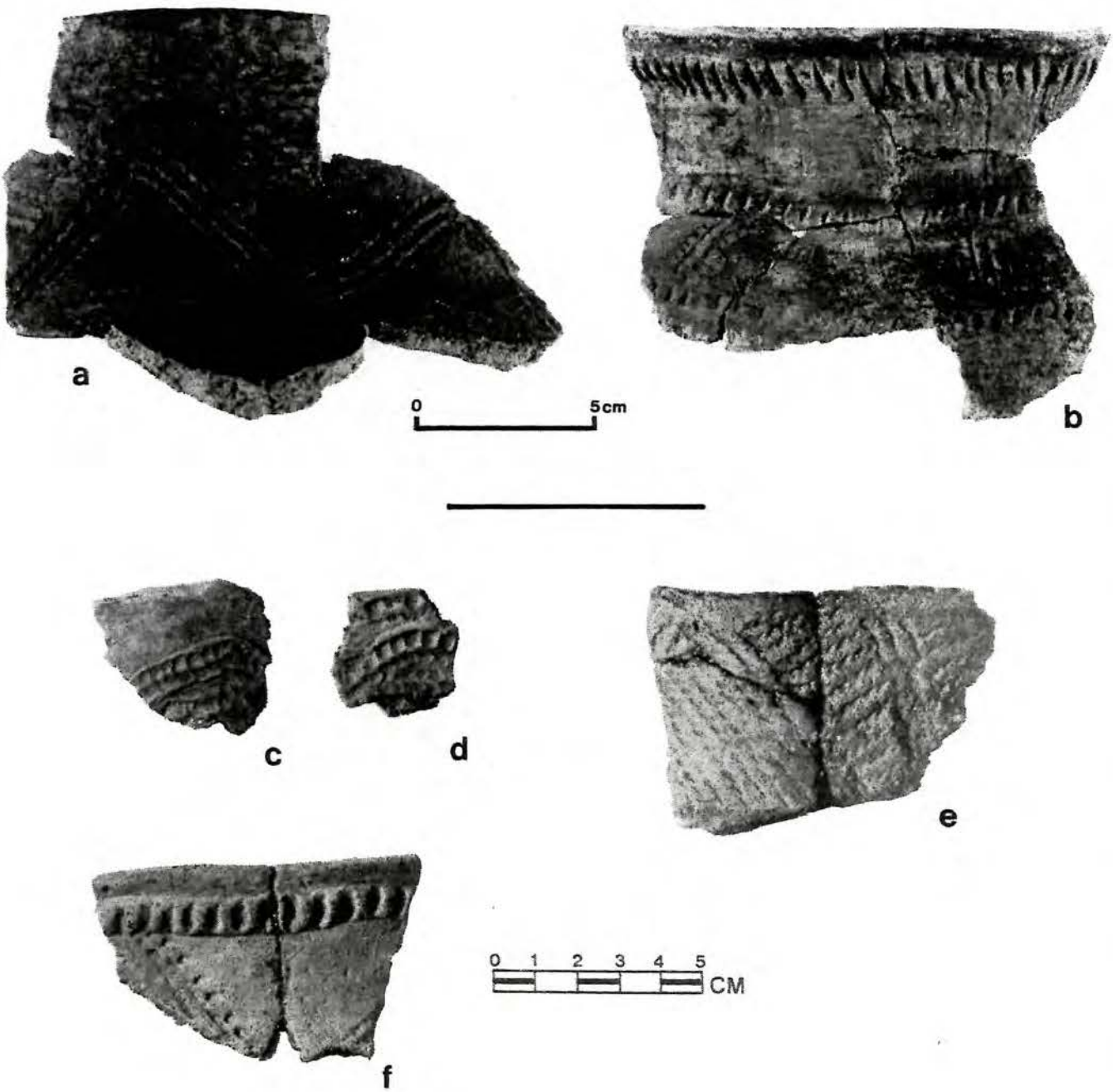

FIGURE 7.23: Weiser Site Rim Sherds. A, C-D: Parker Festooned; B: Notched Strip Applique; E: Cord Impressed; F: Combined Notched Strip Applique and Parker Festooned.

Although less distinctive than Parker Festooned, a number of other decorative techniques and motifs are also associated with the 15th century A.D. Wolf Phase ceramic assemblage. These include a substantial increase in the number of plain or undecorated vessels with straight to slightly flaring rim profiles (T. Lee 1958:18-19). Unfortunately, no examples have been reconstructed, but the profiles and aperture diameters suggest that they may be quite small (ca. 2 liters). While T. Lee felt that these vessels represented "toy pots," which some certainly are, many plain vessels may have served a utilitarian function similar to the miniature, well-made vessels of earlier phases. In addition to plain sherds, T. Lee (1958:19-22) noted several other styles of ceramics, all of which were present towards the end of the Springwells Phase. These include a number of collarless, tool-impressed, punctated, and linear cord-impressed rims.

The second part of the Wolf Phase in southwestern Ontario, which would appear to begin around the start of the 16th century A.D., is characterized by changes to ceramic styles. The large "bag shaped" pots typical of the Springwells and early Wolf Phases appear to be largely replaced by a new form of shorter, grit or shell tempered vessel with strap handles (Ferris et al. 1990; I. Kenyon 1988; Kroon 1972b, 1974; P. Reid 1978a; Stothers, Graves and Conway 1984; Vantomme 1965). The festooned, linear cord-impressed and complex tool-impressed rim motifs are also replaced by a diagnostic horizontal rim strip applique or notched lip motif. This ceramic innovation again is believed to have diffused northward from Ohio or southeastern Michigan, although the exact date of this event is also in dispute (Stothers, Graves and Conway 1984:71-72). It is worth adding that several of the plain rims recovered from the Parker Earthworks, as well as comparable examples from the Iroquoian Savage site, display similar profiles to these later rim appliques of the late Wolf Phase. It may well be that the introduction of plain vessels early in the Wolf Phase foreshadows the notched lip or rim strip motif which appears later on this type of vessel.

Rim applique vessels first appear on the Weiser site in association with festooned rims (Kroon 1972a, 1972b, 1974; P. Reid 1978a; Stothers, Graves and Conway 1984; see Figure 7.23), and are the dominant rim form at the Libby site near Wallaceburg (Ferris et al. 1990; Vantomme 1965; Figure 7.24). These late prehistoric vessels are wide-mouthed pots, with uncollared and uncastellated, slightly everted rims. Vessel necks are constricted and short, entirely lacking the elongation of earlier Wolf Phase vessels. Pot bodies often display a marked neck-shoulder junction and expand to a globular body with rounded or semi-conoidal bases (Figures 7.2 & 7.25). Decoration is applied over smoothed rim and neck areas, and at the Weiser and Libby sites, rim decoration generally consists of horizontal applique strips which encircle the vessel exterior below the lip (Figures 7.23, 7.24 & 7.25). These strips are from 4 to 10 mm wide, and generally are found 15 to 25 mm below the exterior lip edge. Most strips are notched with deep fingernail impressions, although deep vertical incisions can occur. Decoration below the applique strip is generally limited to a widely spaced series of long vertical grooves or tool impressions which occur in sets of three or four around the vessel neck (Vantomme 1965:Figure 1; Figure 7.23b), and a single linear row of circular tool impressions may mark the neck-shoulder junction (I. Kenyon 1988:16). Two to four "strap handles" are often associated with these notched applique vessels, usually attached at the applique strip and then tapered down towards the shoulder of the vessel. Strap handles may be plain or notched with fingernail impressions or short incisions along the lateral edges of the handle (I. Kenyon 1988; Vantomme 1965: Figure 4). Notched lip variants of this vessel form tend to be characterized by a slightly everted rim with a rounded lip, regularly notched by a fingernail or the sharp edge of a tool, giving the lip a scalloped appearance (Figure 7.24i). Notched applique strips may not always occur on these vessels, and indeed smoothed plain rim and neck areas may be common. However, the fragmentary nature of the ceramic assemblage from Libby available for study precludes any definite observations regarding general neck decorative trends for this particular vessel type. Body sherds associated with these late prehistoric vessels tend to be vertically corded (Figure 7.24o), smoothed over corded, or slip roughened and often can show combinations of two of these vessel surface treatments on a single pot (Ferris et al. 1990: Figure 4; I. Kenyon 1988:16).

Unlike the earlier Wolf Phase, only a small number of other vessel types appear to be associated with the notched-applique complex. These are usually smoothed plain rimsherds with cording or stamping on the lip, or vessels which are cord roughened from the vessel lip to base (I. Kenyon 1988; Vantomme 1965: Figure 4). Plain vessels were common on the Liahn 1 site, but only a few examples were present on the other documented Wolf Phase sites in southwestern Ontario (Figure 7.24l,n). Finally, several small vessels from the Libby site display vertical to slightly oblique linear bands of tool impressions on the rim area which may represent examples of poorly made miniature vessels (Vantomme 1965:Figure 4).

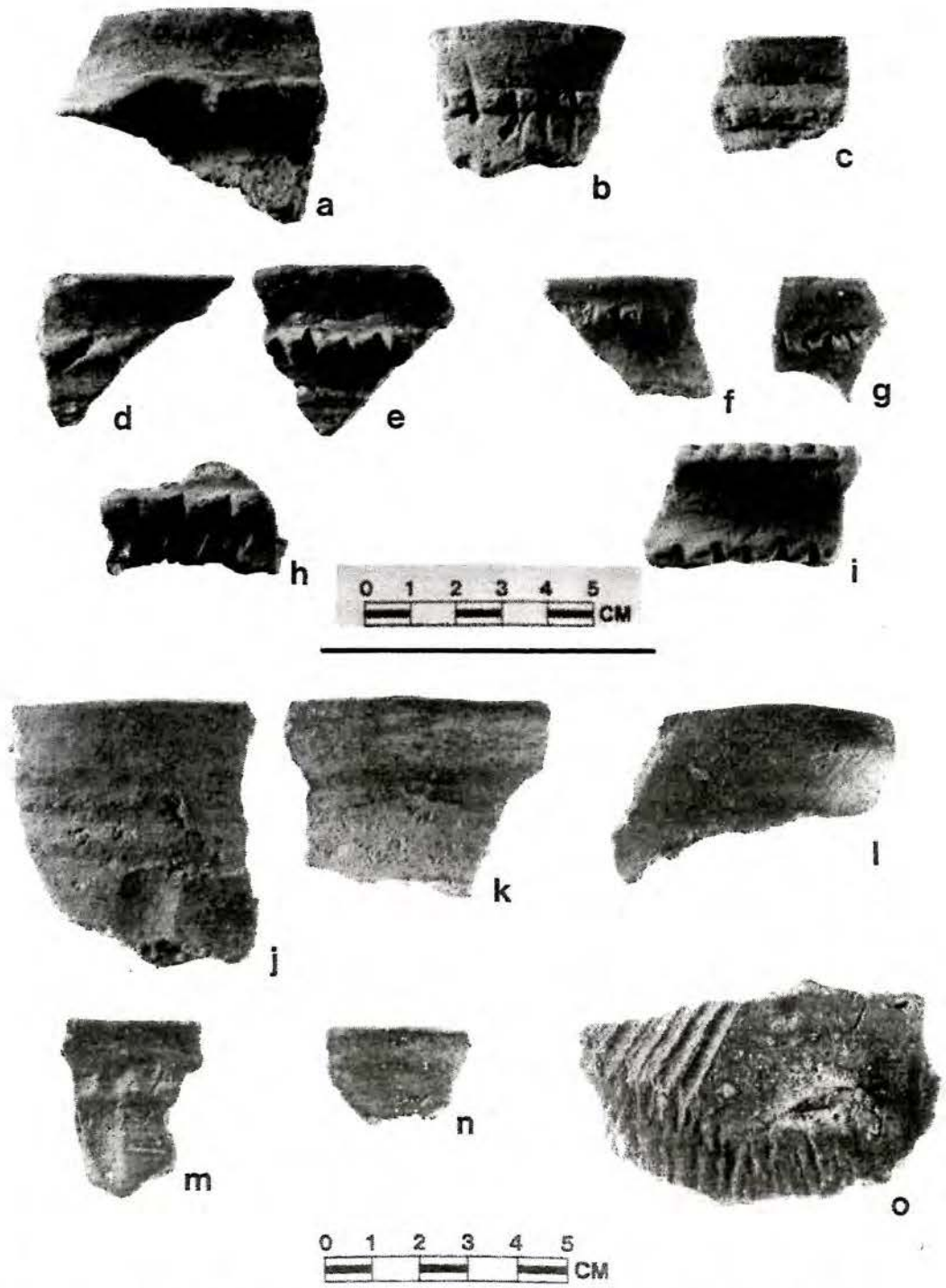

FIGURE 7.24: Leonard Kroon Collection of Libby-Miller Ceramics. A-H: Notched Strip Applique; I: Notched Lip; J-K, M: Either plain rims or examples of exfoliated notched strip rims; N: Plain rim; O: Shell tempered neck-shoulder sherd exhibiting oblique incisions, the base of a strap handle and vertical cord-marking. Access to collection provided by Leonard Kroon, Arnold Pilling and Wayne State University, Detroit.

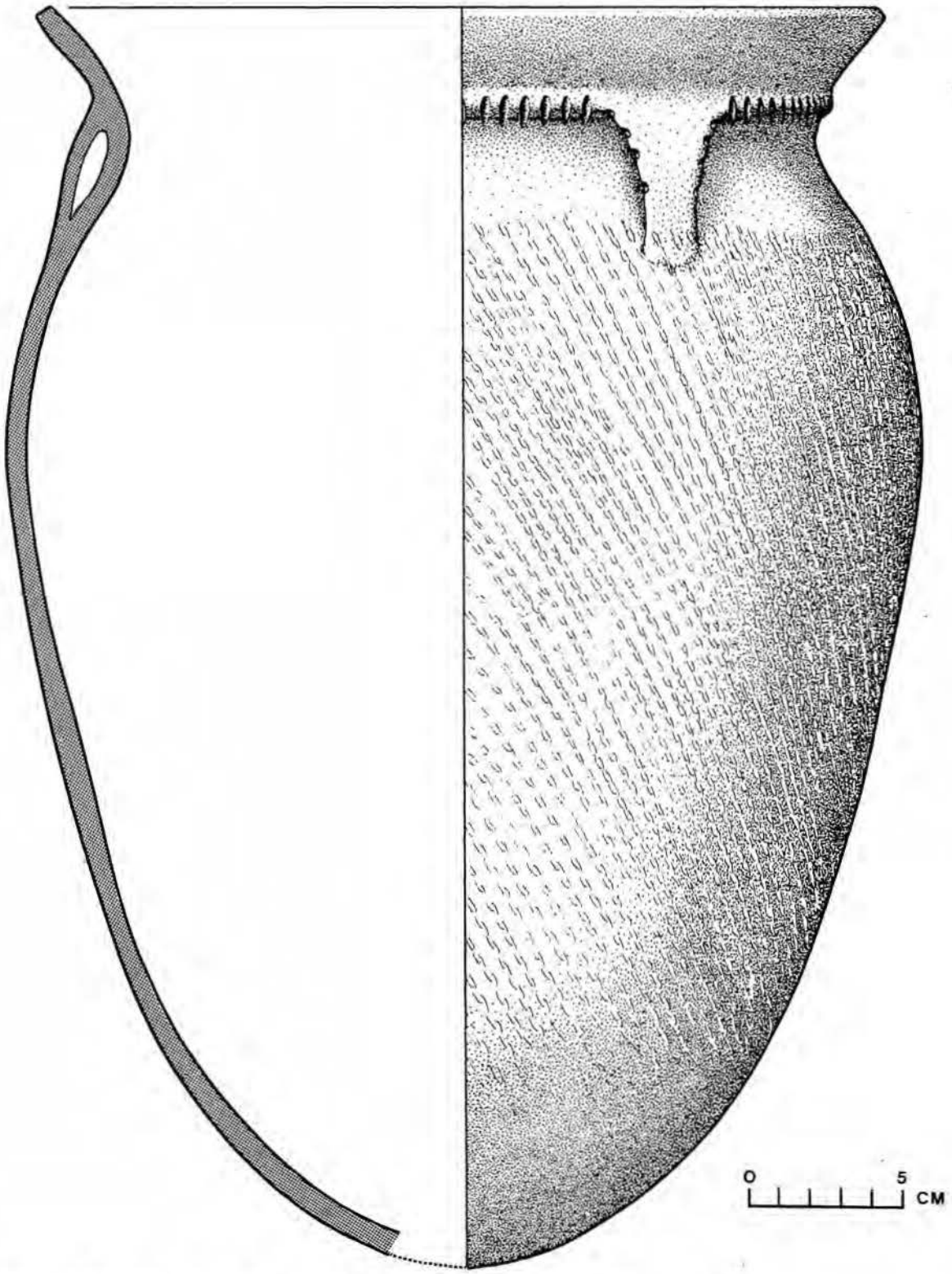

FIGURE 7.25: Notched Strip Applique, Strap Handled Vessel. Artistically reconstructed from Liahn I site (associated with a date of 400 ± 60 B.P.). Illustration by Ian Kenyon.

A characteristic of Wolf Phase ceramic assemblages which apparently increases in frequency during the phase is the appearance of shell tempering. Shell tempering first occurs with Parker Festooned vessels in Ohio (Rutter 1984:153), although this technique was not observed within the ceramic assemblage from the Parker Earthwork site in Ontario. At the later Weiser site, approximately 8% of body sherds were shell tempered (Stothers, Graves and Conway 1984:65), and frequencies do not appear to increase dramatically at the Libby (Ferris et al. 1990) and Liahn I sites (I. Kenyon 1988:21). Several sites in southeastern Michigan also display shell tempered ceramics, but it does not appear to be common at any single site (Krakker 1983:172). However, in Ohio ceramic assemblages are primarily shell tempered by A.D. 1500 (Rutter 1984:114), reflecting a substantial regional difference in the use of this tempering material. The reasons for this emphasis in northwestern Ohio are likely related to local events which did not effect southwestern Ontario prior to a general abandonment of the area somewhere around ca. A.D. 1550.

While the Late Woodland period in southwestern Ontario ends by ca. A.D. 1550, south of Lake Erie a late 16th - early 17th century component is recognized at the multi-component Indian Hills site, located in Toledo (Graves 1984; Stothers 1981; Tucker 1980). The ceramic assemblage from Indian Hills includes only limited frequencies of notched applique rimsherds. The recovery of glass trade beads at Indian Hills dating to between ca. A.D. 1600 and 1625 (I. Kenyon and Kenyon 1983; I. Kenyon: personal communication), confirms the early 17th century component to the site. Replacing notched applique strip rimsherds at Indian Hills are rims decorated with one or more bands of linear, oblique stamps encircling the vessel (Graves 1984:189, 217). However, vessel size and shape appear little changed from the earlier 16th century examples, and ceramics continue the Ohio tradition of being almost entirely shell tempered. Other sites similar in time to Indian Hills or later have yet to be discovered in the Western Basin region (excepting possibly the Pearson site; D. Stothers: personal communication) and Indian Hills appears to represent one of the last indigenous Native occupations in the region. Indeed, the Western Basin seems largely abandoned by the middle of the 17th century, likely due to increasing warfare with historic Neutral Iroquoians situated to the east (see Heidenreich: this volume).

A salient trait of the Wolf Phase in southwestern Ontario is that each of the known sites appear to represent a distinct temporal period of occupation. Consequently, some observations about changing ceramic trends through time can be made. For instance, on the basis of a combination of festooned and notched applique vessels, with both motifs occasionally occurring on the same vessel (Stothers, Graves and Conway 1984: Figure 3b), the Weiser site can be said to post date the Parker Earthworks. Of a total of 144 analyzable vessels, well over 50% of the Weiser assemblage consists of notched applique motifs, and 12 vessels of this type were also shell tempered (Stothers, Graves and Conway 1984:76). The Libby site ceramic collection examined to date is comprised almost entirely of notched applique varieties, although a few notched lip, cord roughened, and fingernail impressed or oblique stamped rims are also present (Ferris et al. 1990; Vantomme 1965). The complete absence of Parker Festooned suggests that Libby post-dates Weiser, and likely relates to the same general period of occupation represented at the Liahn 1 site. At Liahn 1, eight vessels are present relating to this period, including notched lip, notched applique, plain and corded exterior motifs (I. Kenyon 1988:16). On the basis of a total absence of European trade goods and a radiocarbon date of A.D. 1550 ± 60 from the site (see Table 7.2), the Liahn I assemblage, and thus also the Libby assemblage, appear to represent the final stage of prehistoric Western Basin occupation in southwestern Ontario. Strengthening this seriation is the fact that a few late prehistoric Iroquoian ceramic types consistently appear on Wolf Phase sites, and thus serve as useful aids when attempting to confirm the temporal placement of sites dated solely by ceramic seriation. For example, Iroquoian Pound Necked vessels have been recovered from both the Parker Earthwork (T. Lee 1958:19), and Weiser site (P. Reid 1978a: 25). These sherds would appear to place both sites within the 15th or early 16th centuries, and Weiser is in fact believed to have been contemporaneous with the Lawson village in London (Fox 1980d:11). Iroquoian vessels from Libby appear generally to be Lawson Opposed or Incised types (Vantomme 1965:Figure 1.1), and are similar to examples recovered from the ca. A.D. 1550 Wolfe Creek site in Chatham (Foster 1982a).

The remainder of Wolf Phase material culture is poorly documented. Smoking pipes are present on Wolf Phase sites, and may actually increase in frequency compared to earlier phases, although the frequency of pipes on Wolf Phase sites is still dramatically meager compared to frequencies recovered from contemporaneous Ontario Iroquoian sites. Examples found tend to be generally small, with conical or barrel shaped bowls with short tapered

stems (Figure 7.14d). At the Parker Earthwork, decorated bowl fragments were generally ringed with incised lines, sometimes in combination with punctates (T. Lee 1958:20). Punctates, oblique impressions or plain bowls are also known from Wolf Phase sites (T. Lee 1958:21; Stothers, Graves and Conway 1984:65; Vantomme 1965: Figure 5).

Lithic assemblages from Wolf Phase sites display some variation, in that triangular projectile points become smaller, exhibiting Madison-like triangular point type characteristics (Fox 1980d; T. Lee 1958; see Figure 7.9m-o). Other chipped stone tools such as knives, scrapers and spokeshaves are present in collections. Large foliate (bipointed) bifaces, generally made of Bayport chert, have been recovered from the Weiser site (Fox 1981b:3), and these likely functioned as hafted knives (Fox 1982h:2). Partially or coarsely ground stone axes are noted on Wolf Phase sites and these are generally small to medium in size (Ferris et al. 1990; T. Lee 1958; Stothers, Graves and Conway 1984). Unusual ground stone items include a lightly ground shale pebble pendant from the Parker Earthwork (T. Lee 1958:21).

Lastly, worked bone and shell assemblages from Wolf Phase sites include split bone awls (Ferris et al. 1990; T. Lee 1958; P. Reid 1978a), with bi-pointed examples also appearing at Libby (Vantomme 1965). Also present are bird bone beads, antler tine punches and pressure flakers, drilled deer phalanges, socketed antler points, drilled bone needles and modified raccoon baculae (P. Reid 1978a; Stothers, Graves and Conway 1984; Vantomme 1965). Modified freshwater bivalve tool fragments have been identified at both Parker Earthwork and Weiser, while two marine shell beads recovered from Weiser represents some meager evidence for long distance trade (P. Reid 1978a: 42).

Age and Material Culture Summary

Table 7.2 outlines all available radiocarbon dates obtained from Western Basin Tradition sites in southwestern Ontario.[2] Recent work has significantly increased the number of dates available, particularly for the Younge and Springwells Phases. These dates, particularly those obtained in association with diagnostic ceramics, allows us to present the following ceramic seriation summary for the Western Basin Late Woodland (see also Figure 7.2).

Riviere au Vase

While a large number of dates were obtained from Point Pelee sites by Keenlyside (1977, 1978), most of which seem to fall within the Riviere au Vase period, unclear associations and context limit the value of these dates. This is unfortunate, since only three other Riviere Au Vase Phase dates have so far been obtained from southwestern Ontario. Moreover, one of these dates, from the Robson Road site, would appear to be later than anticipated, since it was associated with a plain cordmarked vessel. Generally, the perceived date range for this phase is between A.D. 500-600, to A.D. 800-900. However, this chronological definition is rather arbitrary, since true distinctions between the Riviere au Vase Phase and what occurred 100 years before and after are nearly impossible to define. Indeed, it has been argued elsewhere that the A.D. 500-700 period more properly belongs in the Middle Woodland than the Late Woodland (see Fox: previous chapter; Spence et al.: this volume). While we would prefer to keep at least the latter part of this period within the Late Woodland, it is clear that the Riviere au Vase Phase is best defined as a continuum between the earlier Middle Woodland and the Younge Phase of the Late Woodland.

Given the above, it is not surprising therefore that ceramic vessels of the early part of the Riviere au Vase Phase are little different from those of the late part of the Couture Complex of the Middle Woodland. Vessels tend to be globular, short-necked, slightly everted and cordmarked, with little decoration on the exterior of the vessel. An apparent tendency to thinner vessel walls seems to be the only significant marker of the arrival of the Riviere au

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[2] While many radiocarbon dates are available for Western Basin sites in Michigan and Ohio, they are not provided here because we are not in a position to assess their reliability. The material associations and retrieval contexts of some of these dates are not provided and many of the dated sites have never been formally published. Readers wishing to review some of the American dates should examine the following: Bowen 1980, 1990; Fitting 1966; Krakker 1983; Lovis 1990; Stothers 1973, 1975c; Stothers and Abel 1989; Stothers and Graves 1983; Stothers and Pratt 1981.

TABLE 7.2: Western Basin Tradition Radiocarbon Dates From Southwestern Ontario.

SITE	PHASE[1]	LAB #	DATE B.P.	DATE A.D.	CALIBRATED DATE RANGE	REJECTED/ ACCEPTED[2]	REFERENCE
Western Basin Sites							
Neeb	RV	I-11368	1265 ± 80	685	590-905	A	Fox 1980a
	RV	I-11369	1335 ± 80	615	565-880	A	Fox 1980a
Dymock	Y	I-12149	945 ± 80	1005	890-1250	A	Fox 1982a
	Y	I-12478	940 ± 80	1010	895-1255	A	Fox 1982a
	Y	I-12150	910 ± 80	1040	905-1265	A	Fox 1982a
	Y	I-12151	850 ± 80	1100	935-955/1020-1315	A	Fox 1982a
	Y	I-12152	890 ± 80	1060	910-1275	A	Fox 1982a
	Y	I-12479	1030 ± 80	920	800-1220	A	Fox 1982a
Sherman	S	BGS-1251	710 ± 70	1240	1230-1340	A	Ferris 1988
	S	BGS-1250	580 ± 70	1370	1285-1415	A	Ferris 1988
Bellamy	S	WAT-1639	430 ± 75	1520		R	Murphy 1987
	S	WAT-1638	630 ± 80	1320	1260-1405	A	Murphy 1987
Van Bemmel	Y	BGS-1249	100 ± 70	modern		R	Ferris 1989b
	Y	BGS-1265	1110 ± 70	840	785-1035	A	Ferris 1989b
Krieger	Y	S-620	1350 ± 140	600	425-900	?	Fox 1980a
Belanger	S	BGS-1248	670 ± 70	1280	1245-1395	A	Ferris and Crundwell 1988
Liahn I	S/W	DIC-1007	400 ± 60	1550	1405-1620	A	I. Kenyon 1988
	S/W	DIC-1008	630 ± 30	1320	1300-1405	A	I. Kenyon 1988
	S/W	DIC-1010	270 ± 45	1680	1490-1795	A	I. Kenyon 1988
Weiser	W	?	1545 ± 80	405		R	Fox 1980a
11H2	RV/Y	I-4021	1310 ± 100	640	580-890	A	Keenlyside 1978
11H6	Y	I-4010	940 ± 90	1010	895-1255	A	Keenlyside 1978
11H8	RV/Y	I-4761	1320 ± 95	630	575-885	A	Keenlyside 1978
	RV/Y	I-4762	1110 ± 95	840	650-1135	A	Keenlyside 1978
	RV/Y	BGS-81	1146 ± 57	804	665-1015	A	Keenlyside 1978
	RV/Y	I-4760	940 ± 90	1010	895-1255	A	Keenlyside 1978
11H10	RV/Y	BGS-82	1072 ± 55	878	870-1050	A	Keenlyside 1978
	RV/Y	I-4009	1070 ± 95	880	770-1190	A	Keenlyside 1978

Table 7.2: Continued.

SITE	PHASE[1]	LAB #	DATE B.P.	DATE A.D.	CALIBRATED DATE RANGE	REJECTED/ ACCEPTED[2]	REFERENCE
Dick	Y/S	I-13242	930 ± 110	1020	895-1255	A	P. Reid 1983b
	R	I-13243	780 ± 100	1170	1045-1320	A	P. Reid 1983b
Robson Road	RV/Y/S	I-12268	950 ± 80	1000	890-1250	A	P. Reid 1982
	RV/Y/S	I-12269	1050 ± 80	900	780-1210	A	P. Reid 1982
	RV/Y/S	BGS-1244	960 ± 120	990	885-1245	A	I. Kenyon et al. 1988
	RV/Y/S	BGS-1245	850 ± 90	1100	935-955/1020-1315	A	I. Kenyon et al. 1988
	RV/Y/S	BGS-1246	600 ± 70	1350	1270-1410	A	I. Kenyon et al. 1988
	RV/Y/S	BGS-1247	600 ± 70	1350	1270-1410	A	I. Kenyon et al. 1988
Cherry Lane	Y/S	I-11902	850 ± 75	1100	1045-1260	A	P. Reid 1981
	Y/S	BGS-1266	770 ± 70	1180	1200-1320	A	Ferris and Mayer 1990
	Y/S	BGS-1268	875 ± 70	1075	1035-1250	A	Ferris and Mayer 1990
	Y/S	BGS-1267	950 ± 70	1000	915-1225	A	Ferris and Mayer 1990
	Y/S	BGS-1269	830 ± 70	1120	1055-1270	A	Ferris and Mayer 1990
Bruner-Colasanti	Y/S	I-11828	810 ± 75	1140	1065-1095/1145-1285	A	Lennox 1982
	Y/S	I-11829	855 ± 75	1095	1040-1260	A	Lennox 1982
	Y/S	I-11830	880 ± 75	1070	1035-1250	A	Lennox 1982
	Y/S	I-11831	715 ± 75	1235	1225-1340	A	Lennox 1982
Laramie	Y/S/W?	GAK-1488	460 ± 80	1490	1330-1660	?	Wilmeth 1978
Lucier-E.C. Row	S or S/W	DIC-562	500 ± 125	1450	1310-1515	A	Fox 1982i
	S or S/W	DIC-564	1880 ± 285	70		R	Fox 1982i
	S or S/W	DIC-563	modern	-		R	Fox 1982i
Main Burial	S	DIC-7771	730 ± 110	1220	1165-1395	A	P. Wright 1976
Relevant Ontario Iroquoian Dates From Southwestern Ontario							
Savage	-	I-13546	590 ± 80	1360	1250-1430	A	Murphy 1988b
	-	I-13547	530 ± 80	1420	1275-1500	A	Murphy 1988b
Wolfe Creek	-	RL-1486	580 ± 110	1370	1255-1435	?	Foster 1982a
	-	RL-1487	340 ± 100	1610	1405-1665/1760-1795	A	Foster 1982a
	-	RL-1488	320 ± 100	1630	1410-1670/1720-1800	A	Foster 1982a

Table 7.2: Continued.

SITE	PHASE[1]	LAB #	DATE B.P.	DATE A.D.	CALIBRATED DATE RANGE	REJECTED/ ACCEPTED[2]	REFERENCE
Wolf Creek (continued)	-	RL-1489	440 ± 100	1510	1335-1660	A	Foster 1982a
	-	RL-1490	290 ± 100	1660	1415-1680/1705-1810	A	Foster 1982a

[1]: RV - Riviere au Vase; Y - Younge; S - Springwells; W - Wolf.
[2]: A - Accepted by researcher; R - Rejected by researcher.

Vase Phase in the A.D. 500-600 period. From this and largely through guesswork, it may be that by A.D. 700 exterior decoration begins to make an appearance. Simple rows of tool impressions applied directly over the unmodified cordmarked rim and neck appear first. These are later replaced by more complex designs, such as multiple rows of tool impressions, or angular rows of plaits. By the end of this phase vessels begin to develop characteristics which will carry over into the succeeding Younge Phase, including the appearance of partially to completely smoothed neck surfaces, extended necks and larger body size, and the disappearance of thin, deep cordmarking on vessel bodies in favour of more mottled, "fabric impressed" treatments.

Younge

In general, carbon dates from a number of sites confirm a 9th or 10th through 12th century A.D. period. A single date from the Van Bemmel site is perhaps early for this phase, although ceramic variability within that site's assemblage suggests that a 9th century A.D. date for at least a portion of the site may be appropriate. Indeed, the A.D. 800-900 period would seem to have been a transitional, or rather developmental, time from the Riviere au Vase to Younge Phase, much like the A.D. 500-600 period is a transitional period from the Middle to Late Woodland. If the beginning of the Younge Phase is difficult to define, its termination is abundantly clear, based on dated changes to ceramic assemblages. These dates would firmly put the end of the Younge Phase at about A.D. 1200.

Ceramic trends through the Younge Phase illustrate continuity from the Riviere au Vase Phase and into the Springwells Phase. Early, transitional wares of the Younge Phase appear to be characterized by multiple rows of tool impressions, and the continuation of deep, slashing punctates. Examples of this ware have been recovered from Minshall (Figure 7.7) and Dymock (Figure 7.8), with a portion of the vessel from Dymock coming from a feature which was radiocarbon dated to A.D. 920 ± 80 (Table 7.2). During the 10th and 11th centuries A.D. Younge Phase ceramic trends evolve into "classic" Younge vessels having extended neck sections and highly everted rims with folded over, thickened or even splayed lips. Decoration on necks can be elaborate, using a variety of techniques to generate complex motifs. The dominant motif on these extended necks are the diamond-triangle variants. Punctates continue, although they tend to be shallow, and do not normally generate bosses. It is possible that the appearance of a band of plain neck as a decorative attribute, and the squared, thickened rims found on some Younge Phase sites are late developments, occurring during the end of the 11th and beginning of 12th centuries A.D.

Springwells

This phase is also represented by a large number of radiocarbon dates (Table 7.2), and is firmly dated to between the end of the 11th century A.D. and the end of the 14th century A.D. Substantial changes in ceramic technology during this phase allow for easy identification. In particular, the appearance of elongated, bag-shaped vessels with true collars, long, rib-paddled necks, and bodies treated with a distinctive slip-roughening, are all hall-

marks of the period. In addition, the use of horizontal motifs on rim collars, particularly applied in a push-pull manner, is predominant during the period. Necks tend to be plain during this phase, with a single row of decoration applied to the upper neck immediately below the collar. The appearance of rows of blunt, short tool impressions on collars tends to be a late development during the Springwells Phase, reflecting the introduction of Mixter-like decorative wares into southwestern Ontario at that time.

The ceramic innovations which mark the Springwells Phase of southwestern Ontario and southeastern Michigan show strong similarities with ceramic innovations, such as the rise of horizontal motifs and collared vessels, occurring within Iroquoian groups to the east during the Middle Iroquoian Period (see Dodd et al: this volume). However, ceramic developments following the Younge Phase of northwestern Ohio, particularly around Sandusky Bay and towards present day Cleveland, appear to be characterized by the immediate rise of Mixter wares. This development is seen to be the result of influences on local Western Basin Tradition peoples from the south. The development of this regional variation in ceramic styles during the A.D. 1200 to 1300 period has led some researchers to argue for different ethnic affiliations for each of these two geographic groups. However, we prefer to interpret these changes as simply the result of different regional influences on local Western Basin potters (i.e. Iroquoians to the east and Mississippian to the south). In addition, there is growing evidence from southwestern Ontario to suggest that Mixter wares start appearing on local Springwells Phase sites by the second half of the 12th century A.D. This would imply the spread in popularity of Ohio ceramic trends, rather than the spread of distinct populations into southwestern Ontario, which has been suggested elsewhere (e.g. Stothers, Graves and Conway 1984; Stothers, Graves and Redmond 1984). Mixter wares have been documented on a number of late Springwells sites, such as Lucier and Caron, as well as from Robson Road, where a Mixter-like rim was recovered from a feature which was radiocarbon dated to A.D. 1350 ± 70 (Figure 7.17e; Table 7.2). Also worth pointing out is that Mixter vessels from northwest Ohio, outside of the distinctive rim decoration, appear little different in shape to the dominant vessel form seen on southwestern Ontario Springwells Phase sites (e.g. Figure 7.21). In short, the appearance of Mixter wares on late Springwells Phase sites in southwestern Ontario suggests local cultural continuity from the Springwells into the Wolf Phase, rather than retreating and advancing ethnic groups.

Wolf

Less than a handful of dates have been obtained from this period, although the lack of radiocarbon samples is somewhat offset by cross-dating with Iroquoian assemblages containing Wolf Phase ceramics. The firm dating of the end of the Springwells Phase at about A.D. 1400 confirms this date to be the beginning of the Wolf Phase. The end date for this phase is placed arbitrarily at ca. A.D. 1550-1600, based partially on the absence of European trade goods on southwestern Ontario Wolf Phase sites, but also primarily on the lack of material documented from this region that can be associated with material culture trends observed at the proto-historic Indian Hills site in northwestern Ohio, which has been firmly dated to the early 17th century A.D. (Graves 1984).

The interrupted, horizontal and linear motifs so prevalent during the Springwells Phase are largely abandoned with the introduction of Mixter-like wares on transitional sites such as Caron and Lucier-E.C. Row in Ontario. The addition of narrow applique strips, commonly tool impressed, marks the arrival of Parker Festooned wares shortly after A.D. 1400. Other than in their primary decorative motifs, these festooned wares display little change in vessel size or shape from earlier Springwells types, retaining the elongated necks and bag-shaped lower bodies. Plain vessels, complex punctated forms, linear cord-impressed, and oblique linear stamped motifs are also associated with Parker Festooned during the earlier stages of the Wolf Phase. By the start of the 16th century A.D. significant changes to ceramic styles occur, reflecting changes also occurring at that time to the south and west. Shell tempered vessels with distinctive strap handles and horizontal rim applique strips first appear at the Weiser site in association with Parker Festooned, and at least one vessel from the site shows combinations of both decorative techniques (Figure 7.23f). Strap handled neck applique vessels differ markedly from earlier forms, and are smaller with wide mouths, gently flaring rims, short constricted necks, and globular to semi-conoidal bases. Strap-handled applique vessels are almost exclusively represented at the Libby site. Cross dating Iroquoian vessels found at Libby and Western Basin vessels found at the Iroquoian Wolfe Creek site in Chatham, suggest that the peak of popularity for neck applique vessels fell between A.D. 1500 and 1550 (see Table 7.2).

In sum, evidence available for southwestern Ontario suggests that the Late Woodland Western Basin Tradition can be separated into the following chronological phases, only slightly modified from the original sequence proposed by Fitting (1965, 1966). The Riviere au Vase Phase dates between A.D. 500-600 and A.D. 800-900, followed by the Younge Phase which ends by A.D. 1200. The Springwells Phase spans the period from A.D. 1200-1400, while the Wolf Phase likely ends in this region somewhere between A.D. 1550 and 1600. Further refinements of the Wolf Phase suggest that distinct early (A.D. 1400-1500) and late (A.D. 1500-1550 or 1600) periods can be identified on the basis of ceramic trends. It is moot to suggest that future work is required to greatly enhance and revise this sequence.

Western Basin Tradition Settlement and Subsistence

The Environmental Setting of Southwestern Ontario

Prior to examining the available data for Western Basin Tradition settlement-subsistence, a brief review of the environment of southwestern Ontario within which these people lived is critical to understanding the patterns which evolved during the Late Woodland in this region. Re-creating the environmental setting during the Late Woodland is hindered by more recent changes such as severe logging, intensive agriculture and modern development. Together, these changes have left very little mature forest standing and few parcels of level ground uncultivated. Fortunately, by studying the observations of explorers in the late 17th and 18th centuries (e.g. Hennepin, Charlevoix, Cadillac, etc.; see Lajeunesse 1960), as well as available early 19th century land survey records (e.g. Finlay 1978a; 1978b; 1978c), the past environment can be partially reconstructed. In addition, charred wood and seed data from archaeological sites provide important indications of the arboreal and herbaceous species once found near a site, although archaeobotanical analysis is a relatively recent introduction to the discipline and is not always uniformly employed. The significance of detailed faunal analysis cannot be overlooked as many species of animal once present in the region have been displaced or extirpated, and animal remains are also a good indication of season and focus of a prehistoric occupation. These data sources combined with a knowledge of topography, soils and associated drainage patterns provide the basic information necessary to reconstruct the prehistoric environment, and to interpret prehistoric behaviour.

Briefly, southwestern-most Ontario is characterized by relatively low-lying topography, surrounded on three sides by the shallow basins of Lake Erie, Lake St. Clair and lower Lake Huron (Figure 7.1). The rivers emptying into and connecting these lakes are generally sluggish with little floodplain development, although the greater flow of the St. Clair River has formed a large "crowsfoot" delta at the northern end of Lake St. Clair (N. Adams 1989). Much of the land surface in this region consists of poorly drained, level clay plains formed by pro-glacial lake sediments (see Karrow and Warner: this volume). These plains are interrupted by a series of low, intermittent moraines along the north Lake Erie shore and in northeastern Lambton County. Small sand plains and points are also found along the lakeshores, while much of the clay floor of central Kent, western Elgin and southwestern Middlesex Counties is overlain by outwash and wind deposited sand known as the Bothwell Sand Plain (L. Chapman and Putnam 1984; see also Figure 2.2, this volume). These lakeshores, moraines, clay and sand plains are typified by extremes in soil moisture. Prior to the introduction of modern drainage systems it was quite common to encounter marsh, swamp and well drained soil within a short distance of any waterway.

Overall, these variations in drainage patterns, landforms, as well as the southerly location of the region have all had direct influences on local plant and animal populations. Specifically, southwestern Ontario is characterized by large differences in biomass and ecological diversity between the sand plain, lakeshore and prairie locations and the clay plains. The slow moving rivers flowing into the shallow lake basins with their weedy bays and marsh borders each provided excellent habitats for many species of fish, bird and mammal. Also, areas of well-drained, sandy-loam soils supported wide varieties of nut, berry and seed producing trees and shrubs, while prairie regions in southwestern Ontario were comprised of a plethora of grasses and forbs, with borders marked by oak-hickory savannas (Maycock and Hills 1970). As would be expected, animal species also gravitated towards these vegetative zones, resulting in natural concentrations within such rich ecotones. By contrast, the clay plains which make up the

largest percentage of surface area in southwestern Ontario were relatively inhospitable, dominated by mature black ash, white elm and their forest associates whose crowns produced an almost continuous canopy. The clay soils of these forests often remained wet throughout much of the year, and herbaceous vegetation was limited, except where soil and light conditions improved.

Not surprisingly, prehistoric Native occupations in southwestern Ontario also focused on the sand plains, morraines, lakeshores and prairie borders where elevation and drainage provided the basis for subsistence, fuel and shelter. Furthermore, there were a finite number of locations in the region which could provide seasonally abundant resources exploitable by prehistoric peoples. Consequently sites situated in these locations usually represent long periods of use. Unraveling the subsistence options available in this region, in conjunction with the environmental information provided by surviving archaeological deposits, has become a major focus of Western Basin archaeology in southwestern Ontario, and helps define the patterns detailed below.

Riviere au Vase Phase Settlement-Subsistence

Settlement-subsistence data for the Riviere au Vase Phase is known primarily from a series of sites on Point Pelee, in south Essex County, and from a few components distributed over a wide area in Kent and western Middlesex Counties (Figure 7.1; Table 7.1). Several surface collections supplement the available locational data, but information is extremely limited over the study area for this period. In most respects, Middle Woodland subsistence strategies appear to continue little changed in the early Late Woodland. The established hunting and gathering way of life directed towards harvesting seasonally abundant resources continued, and the majority of the known sites representing the Couture complex were also occupied by Riviere au Vase groups.

Point Pelee, that area best representing Riviere au Vase Phase occupations in southwestern Ontario, is one of the most diverse environmental regions of the Great Lakes, supporting large populations of Carolinian plant and animal species. Undoubtedly, the Riviere au Vase occupation of the point had much to do with this rich diversity and abundance. Of the Point Pelee sites, the largest and most informative is 11H8, located adjacent to a large marsh area (Keenlyside 1977, 1978). While multi-component, the relatively discrete, early Riviere au Vase component at this site appears to represent that period of most intensive occupation (Keenlyside 1977:76). A total of 73 square metres were excavated over two areas of the site. Stratified Layer 2 revealed densities of cultural material not repeated elsewhere on Point Pelee (Keenlyside 1977:529), producing early Riviere au Vase Phase undecorated vessels and corner-notched points. The frequency of remains and location on the edge of a gently sloping ridge strongly suggest that the excavated areas of 11H8 represent long term midden accumulation.

Post mould patterns observed in Area A of 11H8 were thought to represent a 9 x 3 metre structure (Keenlyside 1977:77, Figure 59). In view of the small area excavated, intermittent post spacing, and that the "walls" appear to turn at the edge of excavation, it is premature at this time to consider the patterns at 11H8 as representing a formal structure. The absence of such data is unfortunate. Since the 11H8 occupation appears to represent seasonal gatherings which may have lasted over several months, the potential for documenting the first known structures for the Riviere au Vase Phase in southwestern Ontario remains good.

Identified faunal remains from the lower, undisturbed levels of 11H8 appear much like a list of available species from a marsh and lakeshore environment. Twelve bird species were found, and seven of these represent summer migrants. Twelve species of mammal were also recovered, as well as a number of fish species. Numerous netsinkers and possible harpoon fragments are present in the artifact assemblage, suggesting multiple methods of fish procurement. Overall, the faunal remains suggest an intensive summer occupation by groups practicing a diffuse subsistence pattern where exploitation of the surrounding environment was the major activity. Cultivated plant remains were not recovered during excavations, and pollen data from cores taken in adjacent marshes argue against the site being used for horticulture. Some charred black walnut and butternut shells were found and these may represent an early fall occupation.

Later components on Point Pelee represent continued warm season occupations and are more numerous, but appear to be smaller camps focused on the immediate resources of the marsh and lakeshore. The reasons for this shift in degree of use are unclear but they may be due to differing seasonal subsistence emphases during the later Riviere au Vase Phase.

Additional information on Riviere au Vase Phase utilization of Lake Erie sand points comes from the Indian Clearing site (Stothers 1974d), one of several early Late Woodland occupations on Point aux Pins (Rondeau Bay) in south Kent County (Figure 7.1). Point aux Pins is geographically and environmentally similar to Point Pelee, and Indian Clearing, like 11H8, is also found about midway down the point. Three trenches totaling just over 16 square metres in what appeared to be a midden area were excavated. Subsistence information from Indian Clearing is limited to animal remains, and fish comprise the majority of the specimens (67%). Seasonally significant are the number of turtle remains (20%), while mammals are less well-represented (10%). This parallels the decreasing importance of mammals on the later Riviere au Vase components at Point Pelee, possibly because these species were hunted at mainland locations.

These sand points remain the best documented areas in southwestern Ontario for the Riviere au Vase Phase. Little substantive information is available for lakeshore areas, or from the interior river valleys and sand plains. Each of these environmental regions are known to contain Riviere au Vase occupations but this material is often recovered intermixed with Middle Woodland or later occupations. For instance, a Riviere au Vase Phase occupation has been documented at the multi-component Robson Road site, situated along the Lake Erie shore northwest of Point Pelee (I. Kenyon et al. 1988). Elsewhere, the majority of documented Riviere au Vase Phase interior settlements are known from a few limited excavations and surface collections along the Thames River from central Middlesex County to the western edge of the Bothwell sand plain. Riviere au Vase Phase ceramics have also been found at the predominantly Wolf Phase Libby site on the lower Sydenham River (Ferris et al. 1990; Vantomme 1965), and at the stratified Wyoming Rapids site on the Ausable River (I. Kenyon 1979c).

Two of the most easterly Western Basin sites known to date, Sibelius and Neeb (Figure 7.1), have Riviere au Vase components represented by early Wayne wares and later decorated forms (Fox 1983b, n.d.b). Sibelius is found adjacent to the Thames River on a floodplain, while Neeb is situated to the north on a bluff edge overlooking a floodplain. Of the two site investigations, only Sibelius has been fully reported (Fox n.d.b). At this site, the largest component relates to the Middle Woodland Couture Complex, with occupations continuing into the Riviere au Vase Phase and later. The majority of the artifacts recovered were worked lithic material and debitage, ceramics, and deer bone. Fox suggests that the Sibelius site represents numerous, short term hunting camps, while the steep banks of the river and nearby terrace may have been utilized for deer drives (n.d.2:32).

A small cluster of Riviere au Vase Phase components on the western edge of the Caradoc Sand Plain have also been examined (M.P.A. 1988). A large block of land, consisting of several low sandy knolls adjacent to a large marsh, was investigated in 1987. Several discrete hearth and pit concentrations were found on individual knolls associated with Riviere au Vase Phase ceramics. These associations may indicate habitation areas, and their small size and inland location adjacent to swampy area suggest that the sites were probably used for late fall hunting or winter subsistence activities by Riviere au Vase groups (M.P.A. 1988).

To the south and west, several Riviere au Vase Phase sites are known along the Thames River near the center of the Bothwell Sand Plain in Kent County (Figure 7.1). Only the Couture site, located about a kilometer north of the Thames, has received professional excavation (Fox 1985b). In an area of 33 square metres, Fox discovered a sample of Middle Woodland ceramics, along with portions of three Riviere au Vase Phase vessels. Two cultural features were also found, consisting of a small pit and hearth. The pit contained a quantity of charred black walnut, acorn and butternut (Fox 1985b:17). Fox considers the Couture site to represent one of many deer hunting - nut processing camps in the general area, seasonally occupied over much of the Middle Woodland and early Late Woodland period (1985b:17).

A short distance west of Couture and closer to the river, surface surveys have revealed concentrations of lithic tools and debitage, ceramics, ground stone tools and fire-cracked rock extending over a hectare. These concentrations are known collectively as the Parks site, and the primary occupation also spans the late Middle Woodland and much of the Riviere au Vase Phase (Fox 1985b:17). Close to Park and immediately adjacent to the Thames River, a complete, decorated Riviere au Vase pot was recovered at Fairfield Creek (Ferris 1989c), further emphasizing the early Late Woodland focus along this stretch of the Thames River. Another similarly situated Riviere au Vase Phase site is Van Hooste, located west of Thamesville along the south bank of the Thames. Excavated in 1969 by Harry Bosveld, 80 square meters of site area yielded substantial frequencies of Middle and early Late Woodland ceramics and lithics (Knight and Ramsden n.d.). As these riverside sites have not received extensive investigation it is premature to propose specific seasonal exploitive patterns, however, several key resources tend to be located in the immediate vicinity of these sites, namely fish, deer and nuts, and likely account for the high density of occupations in these areas.

Riviere au Vase Phase Settlement-Subsistence Summary

The subsistence and settlement patterns of the Riviere Au Vase Phase are far from understood, but as a starting point it appears that a number of small, hunting and gathering groups occupied southwestern Ontario during the early Late Woodland. These people practiced a subsistence economy based on the exploitation of seasonally abundant plant and animal resources, and group mobility was required to take advantage of the region's natural productivity. This seasonal exploitive pattern was likely undertaken according to an established yearly cycle which may have had a substantial time depth by Riviere au Vase times. The intricacies of this seasonal scheduling have not been adequately investigated, and a crucial question for early Late Woodland studies is whether all Riviere au Vase Phase peoples practiced a similar adaptive strategy. If each group from Lake Erie to Lake Huron exploited similar environments at similar times of the year, then each excavated site could be assumed to reflect a segment of the regional subsistence pattern. Alternatively, if Riviere au Vase Phase groups occupying the Bothwell or Caradoc Sand Plains remained inland throughout the year, then locally distinct subsistence patterns were likely involved.

Unfortunately, the settlement-subsistence pattern of the Riviere au Vase Phase over the coldest months of the year is not known at this time. Assuming that Riviere au Vase peoples within this region followed fairly typical hunting-fishing-collecting activities as seen for ethnographically described hunter-gatherer groups in the Great Lakes region (see Trigger, editor, 1978), it may be that the cold weather pattern was one of small groups (single, extended families) dispersed along smaller drainages where traditional hunting territories were exploited over the winter. In fact, this appears to be the case during subsequent phases of the Western Basin Late Woodland, and is suggested by the data from the Western Middlesex Transformer Station sites (M.P.A. 1988). Yet, the abundant resources of southwestern Ontario could also have allowed for Riviere au Vase peoples to simply remain at fall deer hunting - nut processing camps over the winter.

Many of the settlement-subsistence strategies of the Riviere au Vase Phase appear to continue into the succeeding Younge Phase with little change, which is consistent with the patterns observed within the material culture sequence between these two phases. However, the proposed pattern of less intensive utilization of the resource rich sand points, such as Point Pelee and Point aux Pins, may be an indication of alterations to at least part of this strategy. Continuity can be seen elsewhere, however, where Younge Phase interior sites along the Detroit, Thames and Sydenham Rivers continue to be found at locations comparable to those utilized during the Riviere au Vase Phase, although not necessarily at exactly the same locations.

Younge Phase Settlement-Subsistence

Some researchers in Ohio and Michigan have argued that settlement-subsistence strategies at the start of the Younge Phase are characterized by a shift away from seasonally mobile groups moving from resource to resource, based on availability during an annual cycle, to a more fixed pattern of settlement in semi-permanent or permanent villages inland from major waterways and lakefronts. Subsistence is focussed on agriculture, augmented by hunting, gathering and fishing, usually conducted from specific function camps (M. Pratt 1981; B. Redmond 1984; Shott and

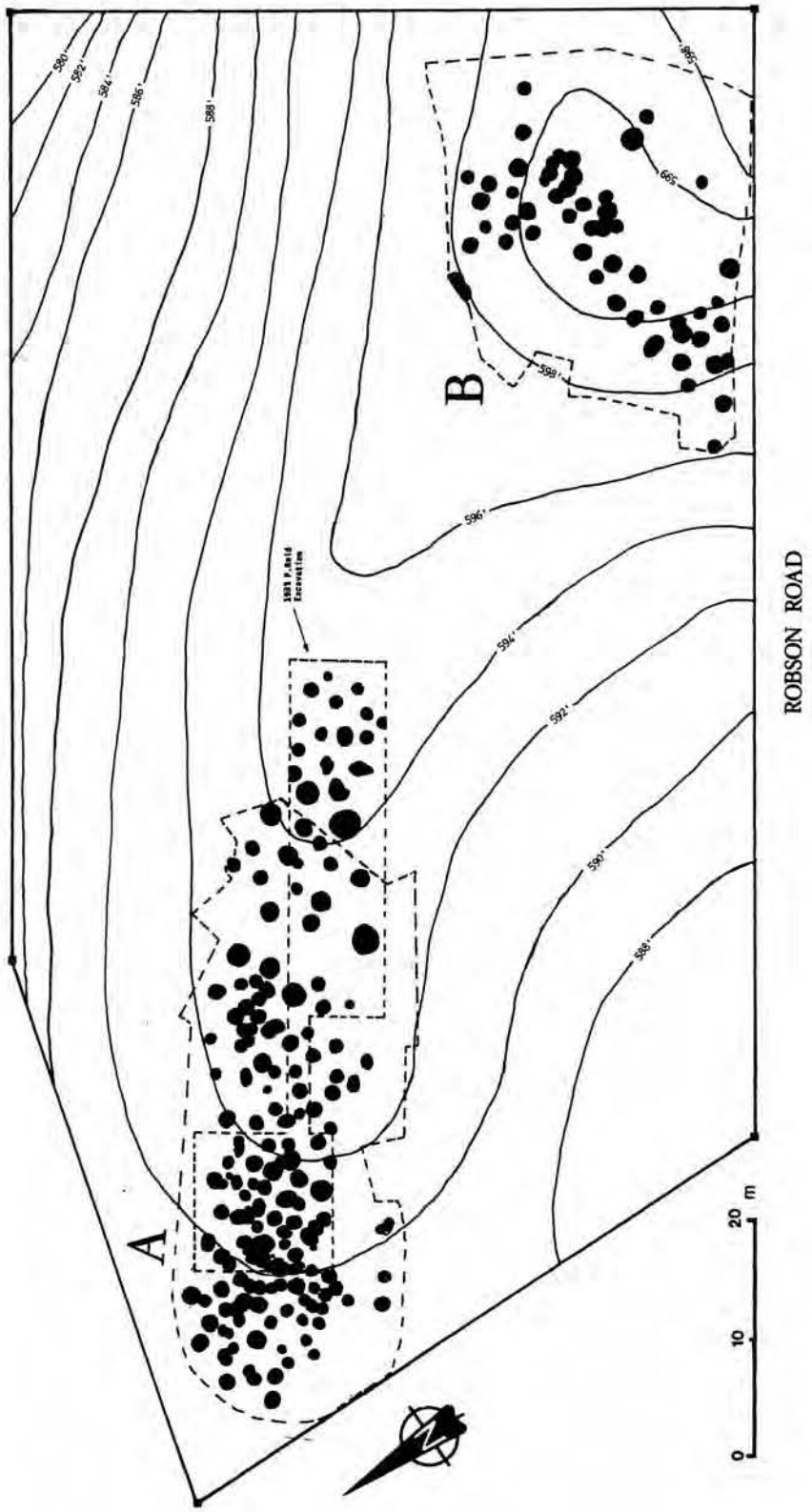
A
B
ROBSON ROAD
0
10
20 m

FIGURE 7.26: Robson Road Site Excavations, 1981, 1987. Areas to the east of Area A and to the north of Area B were not documented because of previous sand quarrying activities. Areas to the west of Area A and south of Area B are roadways.

Welch 1984; Stothers, Graves and Redmond 1984). In Ontario and Michigan, other researchers have generally interpreted Younge Phase seasonal patterns as consisting of warm season agglomerations and cold weather dispersed camp occupations. Subsistence strategies are seen as being diffuse, taking advantage of all available resources in a region, supplemented by some agriculture (Brose and Essenpreis 1973; Fitting 1970; Fox 1982b; Keenlyside 1978; Lennox 1982; P. Reid 1983b, n.d.).

While it is clear that by the end of the Younge Phase settlement-subsistence patterns had changed substantially from the beginning of the Late Woodland, the archaeological information from southwestern Ontario is difficult to package into a well-defined model of seasonally practiced subsistence strategies. In general, the settlement-subsistence pattern for the Younge Phase in southwestern Ontario appears little changed from earlier times. Also, there is little evidence to suggest that village occupations with a strong focus on horticulture were common, although this may have been the case elsewhere.

Before outlining what is known of Younge Phase settlement-subsistence in southwestern Ontario, it is necessary to stress that the existing database is weak. Only three sites of interpretive value have been investigated in south Essex County. Further, while local collections from the Thames, Sydenham and Detroit Rivers suggest that Younge Phase sites are as extensive along river drainages as they are along lake frontage, only three Younge Phase sites in those areas have received any investigation. Also, other critical areas of southwestern Ontario, including the south shore of Lake St. Clair, along the St. Clair River, and the Erie lakeshore in Kent County, have been void of substantial archaeological investigation. This obviously limits the ability to properly reconstruct settlement-subsistence patterns, particularly if the annual cycle during Younge Phase times included the use of several different site locales (e.g. Ferris 1989b). This is even further complicated since southwestern Ontario offered relatively rich environmental areas; with such abundance and diversity, tight scheduling of seasonal round activities was probably not required. The resulting archaeological data from such an informal seasonal round would be complex and difficult to interpret under the best of circumstances.

Because of these limitations the following discussion can only be presented in a broad fashion. For the purposes of this summary, sites for south Essex County will be discussed prior to examining those known for river drainages. It should be stressed that such a distinction is largely a product of the available data and is a convenient method of presentation, and such a distinction may or may not have been real during the Younge Phase.

South Essex County

Excavations at the Robson Road site, adjacent to Lake Erie (Figure 7.1), failed to yield structural data (I. Kenyon et al. 1988; P. Reid 1982). Rather, the site is characterized by hundreds of large pits, scattered over two sand ridges (Figure 7.26). These pits do not appear to have been placed in any visible order, and the large number (54) of overlapping pits indicates recurring use of the site. In fact this locale, based on ceramic data, appears to have been used from the Middle Woodland to late during the Springwells Phase (P. Reid 1982; I. Kenyon et al. 1988; see Table 7.2). Evidence of seasonality based on faunal and limited floral data suggest the site was occupied during the warmer months. Focus of occupation appears to have been the utilization of resources available in the immediate vicinity, as faunal evidence documents the use of large numbers of fish species (yellow perch, burbot, walleye, bowfin, drum, catfish, sucker), probably harvested from the adjacent bay and stream. Also present in the faunal collection are quantities of deer and raccoon, as well as smaller quantities of other mammals (Prevec 1988b).

The large pits which so characterize Robson Road are a common feature on Western Basin sites. At Robson Road these features ranged in diameter from 80 to 120 cm, and in depth from 40 to 70 cm. A large number of the features were layered, however much of this layering appeared to be due to pit wall collapse or post-use infilling.

These features can be quite deep (Figure 7.27), with occasional examples at adjacent sites extending over a metre in depth. Some also appear to have been bark lined. These features are thought to have served as storage or cache pits. Both the bark lining and depth of the pits probably assisted in creating small "cold cellars", where foods could be preserved and stored, providing a source of food which could be accessed later, perhaps in periods of less abundance (e.g. Cleland 1982). These pits were also used to store other material goods, most notably ceramic vessels. While used for storage, these features do not appear to have been commonly used as refuse pits. Thus, despite their large size, these pits are sparse in artifact yields. For instance, at Robson Road some 60.5% of all features yielded 25 artifacts or less.

It is difficult to ascertain the occupational history of sites characterized by nothing but these large storage pits. While overlapping pits suggest more than one episode at a site, it is virtually impossible to determine if a pit or group of pits represent one year's occupation, and if the pattern was similar year after year. This is only further exacerbated by the long use of such sites. In general, we can observe that most pits do not appear to be re-used over extended periods of time. Excavation of pits immediately adjacent to others also suggests avoidance of old or "used" pits. In fact, the lack of debris in these features may be partially a result of filling in one pit with the soil from a pit excavated next to it (M. Pratt: personal communication). The reasons for this avoidance are difficult to grasp, although it is possible that, as pits eroded and became infilled, they were no longer functional as "cold cellars."

Beyond saying that the Robson Road site was apparently used sporadically over a long period, and during warm months, it is difficult to fit the site into any specific seasonal round. However, perhaps this is the message to be learned from a site such as Robson Road. Southwestern Ontario was an exceedingly rich environment, particularly in the area of southeast Essex County, and the range of resources and length of their availability perhaps did not require individuals to be committed to any one locale or exploitive strategy at any given time during warm weather. Consequently, it is quite conceivable that Robson Road was, for a given year, visited frequently and irregularly during the warmer months, reflecting part of a very unstructured seasonal round.

Immediately north of Robson Road by a few hundred meters is the Cherry Lane site (Figures 7.1 & 7.29). Tested in 1980 (P. Reid 1981) and fully mitigated in 1988 (Timmins 1989; Ferris and Mayer 1990), Cherry Lane extends over two sand knolls and into a low "saddle" depression between the knolls (Figure 7.28). To the east is Leamington Creek, while land to the north and south is low and wet. On the tops of the knolls were scattered a number of large storage pits. The saddle area appears to have been used primarily for habitation, and revealed the remains of at least one house, measuring 7 x 13 metres, as well as a number of storage and refuse pits, hearths, ash pits, and habitation stains. Faunal data is limited, and consists of deer, raccoon and muskrat, along with several fall spawning fish species (Prevec 1989a). In contrast to the pattern observed at Robson Road, floral data is characterized by an astounding quantity of nut remains, including large amounts of chestnut, walnut and butternut, most of which was recovered from rich, ash filled refuse pits in the habitation area. A small quantity of maize was also recovered in both 1980 and 1988 (Fecteau 1985).

The discovery of a structure at Cherry Lane was fortunate. However, as is typical for Western Basin sites, Cherry Lane was mitigated in advance of a subdivision development. Agricultural and development disturbance on the site appears to have partially obliterated the north wall and west end of the structure (Figure 7.28). In the house are three hearths, two flanked by small ash pits, and one by a slightly larger pit, which may have served to hold a pot. A number of larger pits are found at the east end of the structure, one of which was relatively deep, and contained a quantity of nut fragments, portions of ceramic vessels, and numerous limestone cobbles. The floor of the structure is stained in three areas by a thin, dark layer of soil, containing charcoal, ash and some debris. A scattering of posts at the southwest corner of the structure may have served as an entrance, however the sketchy nature of the wall in that area limits such an interpretation. Just beyond the house to the east are a number of pits, which appear to have been used for both storage and refuse and represent one of five such clusters of storage pits within the habitation area of the site. To the west, a large stain filled with refuse is interpreted as a midden. The Cherry Lane house is comparable to some smaller structures which have been reported for the contemporary Ontario Iroquoian Glen Meyer sites to the east (e.g. Fox 1976, 1982c, 1986b), although internal feature arrangement differs. On Glen Meyer

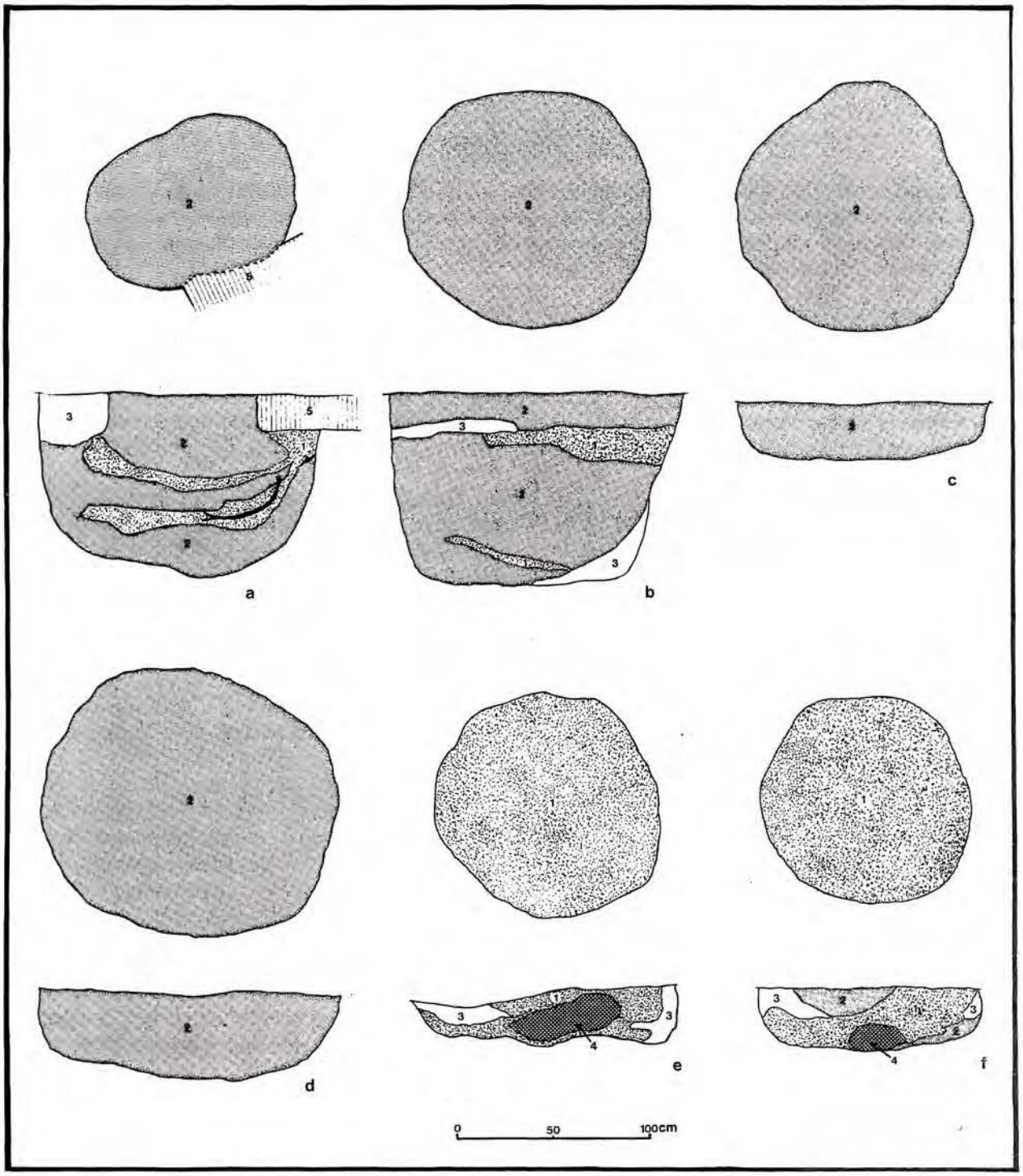

FIGURE 7.27: Storage (A-D) and Refuse (E-F) Feature Profiles from the Cherry Lane Site. 1: Black topsoil layer; 2: Dark brown topsoil layer; 3: Subsoil layer; 4: Ash layer; 5: Disturbance.

sites these structures have been interpreted as being seasonally occupied houses used during activities like hunting, and perhaps used by a single family (Fox 1982c; Peter Timmins: personal communication). At the same time, the Cherry Lane house appears to be similar to cold weather lodges or wigwams, commonly documented in the ethnohistoric literature for various Great Lakes Algonquian groups (e.g. Callender et al. 1978; Clifton 1978; Densmore 1929). These houses generally were occupied by one or two extended families. Given the lack of actual living space in the Cherry Lane house, it too is believed to have held one, or at most two, informally extended families.[3]

It is also possible, given the spatial patterning of some of the other pit clusters, and the presence of habitation stains and post moulds in the northeast corner of the excavations and in P. Reid's test trenches, that further houses were also present on the site, and have been lost due to development disturbance, soil erosion, or dry soil conditions during excavation making post moulds difficult to identify.

Complementing the habitation area and located on the knolls to the north and south, close to 80 large and deep storage pits were excavated in 1988. It is possible that these storage pits were used to cache the harvest of nuts and other foodstuffs documented for the site. Perhaps these caches were kept over the winter until people returned to the area, probably to sites like Robson Road, the next spring. The presence of Springwells Phase material from two of the pits in the south concentration and the lack of it elsewhere suggests that the site may have been used for caching, but not as an occupation during the later period.

Floral, faunal and settlement data at Cherry Lane suggest that the site was occupied during the fall, an important activity being the harvest and caching of nut resources, and the harvest of fall spawning fish. A similar pattern, with perhaps an emphasis on deer rather than fish has been identified at the Bruner-Colasanti site. This site was mitigated in 1980 (Lennox 1982). Perhaps the most substantial excavation of a Western Basin site yet conducted in Ontario, Bruner-Colasanti is located in the interior on a low sand ridge, some distance east of the Leamington area sites (Figure 7.1), and its size is estimated to be more than a hectare (Lennox 1982:9). This site is located away from a source of running water, but does sit adjacent to a swamp, small marshes, and oak-hickory stands.

Like Robson Road, Bruner-Colasanti is characterized by large numbers of storage pits, although many shallower pits and hearths were also encountered. Unlike Robson Road, at Bruner-Colasanti these features do not appear to overlap, and pits appear in defined clusters, encircling a relatively open central area or "plaza." Lennox (1982:9) has suggested that the eight pit cluster areas represent dwellings - these large storage pits located inside houses, probably covered in order to maintain a large area of utilized floor space. However, we would prefer to interpret the concentrations of large storage pits as situated outside houses. Rather, the central "plaza" area, characterized by a lack of storage pits and a greater number of hearths and smaller, non-storage like features with a relatively high amount of refuse may well represent the actual area where houses stood. This pattern is consistent with the patterns from Cherry Lane, where habitation and storage areas were separated. The lack of settlement data at Bruner-Colasanti may be due to poor soils, agricultural disturbance, or perhaps because the structures used were temporary shelters, which would not have left behind discernible settlement data. A Springwells Phase pit concentration in the southeast corner of the site exhibits a similar clustering pattern to that seen elsewhere on the site. This suggests that similar settlement patterns, and possibly similar extractive patterns, were maintained at Bruner-Colasanti through the two cultural phases, despite other, substantial changes to subsistence strategies between the

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[3] The term "extended family" used in this chapter should be recognized by the reader as a convenient construct, and should be accepted with caution. The authors are making the assumption that, since most of the Western Basin Tradition is characterized by a fairly common hunter-gatherer form of subsistence, these peoples were thus likely organized into fairly typical communal groups: the regional band within which the basic unit was the extended family. This could include a nuclear family, as well as an irregular number of close family members such as widows or infirm parents, unmarried or widowed children, unmarried or widowed siblings, or even two nuclear families. We acknowledge that determining actual family makeup from the archaeological record is difficult, if not impossible. However, for the purposes of this review of the Western Basin Tradition, we do feel we have some justification in relying on available ethnographic analogues for trying to describe some aspects of Western Basin community structure.

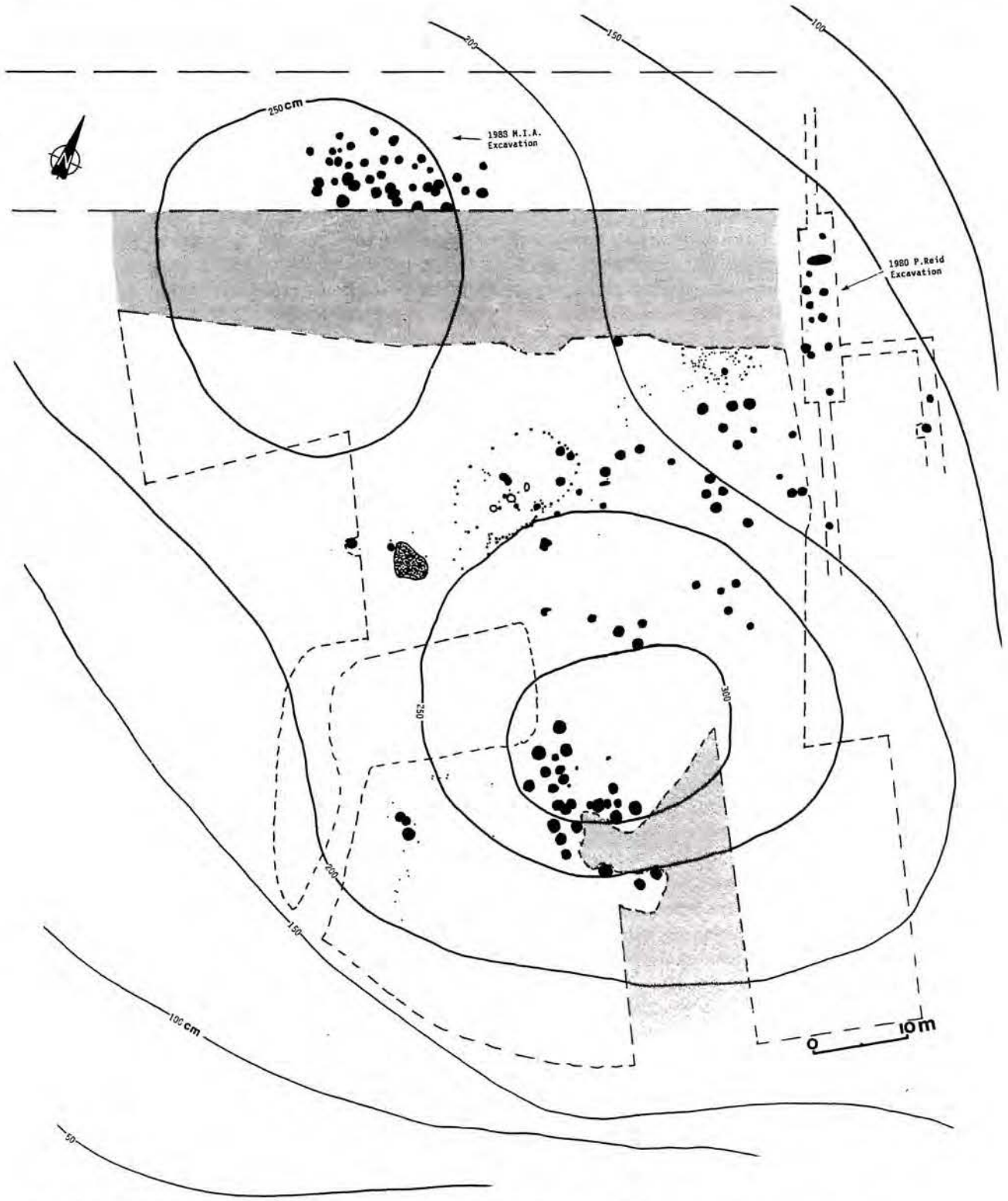

FIGURE 7.28: Map of Cherry Lane Excavations, 1980 and 1988. Stippled areas of map represent construction disturbance.

Younge and Springwells Phases.

Bruner-Colasanti is thought to be a primarily fall occupation, suggested by the absence in the faunal collection of fish and migratory bird species (Lennox 1982:73-74), as well as the presence of carbonized remains of hickory, acorn and walnut (Lennox 1982:51). Quantities of maize were also recovered, although this maize was probably cultivated at summer camps, and brought to Bruner-Colasanti to serve as a food source (Lennox 1982:108). Faunal and floral evidence reflect a diffuse economy, focused on the resources available in the immediate vicinity of the site during the fall season. In all likelihood, people gathered together at Bruner-Colasanti in order to harvest local stands of nut producing trees, as well as to hunt local populations of deer. These people, representing a number of extended families, probably came from nearby warm weather occupation sites, perhaps from one or more of the Late Woodland sites registered in the area (Carey 1978, 1979). While speculative, it may be that the clustering of storage pits reflects separate ownership, each cluster being the storage area of a single extended family. Following the harvest and processing of nuts and at the conclusion of the fall hunt, people at Bruner-Colasanti most likely broke up into family groups and moved on to winter camps and hunting grounds.

In addition to those just discussed, there are a large number of Western Basin sites known for south Essex County, primarily associated with the numerous small creeks entering Lake Erie (Bond 1966; Carey 1978; Ferris and Mayer 1990; P. Reid 1979; 1986). In particular, several other site locales have been documented within a kilometer of Lake Erie along Leamington Creek (Ferris and Mayer 1990; P. Reid 1979; see Figure 7.29). While traditional interpretations of hunter-gatherer communities tend to emphasize mobility over large distances in order to reach diverse resources, in resource rich southwestern Ontario it is possible that, in a given year, a hunting, gathering and fishing extended family would not necessarily have had to travel far to obtain a diverse selection of resources. In the area around Leamington Creek there was opportunity for taking advantage of open water, bay, beach, creek, marsh, forest and forest edge environments, as well as soil suitable for small agricultural garden plots. In all likelihood, with perhaps the exception of occasional forays wider afield to places such as Point Pelee, it is possible that the Younge Phase peoples around the mouth of Leamington Creek primarily occupied that area from spring to fall, using several locales over the course of the season.

The warm weather subsistence strategy outlined for south Essex County implies that the growing of maize likely occurred adjacent to some of these warm weather sites, on patches of well-drained sand. Such fields would have been little more than garden plots used to augment a diversified resource diet. Only Bruner-Colasanti produced anything more than a smattering of maize fragments. While such a secondary role for maize horticulture would appear to be inconsistent with the Younge Phase seasonal round proposed elsewhere, it is not inconsistent with what might be expected of a hunter-gatherer-fishing people with access to such a rich and varied resource base.

There is good evidence to suggest that Younge Phase peoples also exploited the major points of land jutting into Lake Erie, namely Point Pelee and Point Aux Pins (RondeAu Bay) (Keenlyside 1977, 1978; Newton 1975; Stothers 1974d). These locales are resource abundant and would have been important to the seasonal activities of Younge Phase peoples occupying the region. However, permanent populations of Younge Phase peoples probably did not live on these points through the warm weather season. Rather, they probably occupied short term, extractive camps. Younge Phase occupations have also been identified on Pelee and Middle Islands (Fox 1984d; Keenlyside 1980; Ron Trider: personal communication). Again, no substantial occupations have been recorded, and seasonally occupied camps appear to have been the norm. At the primarily Younge Phase Muriel Ryersee site on Pelee Island, Ron Trider surface collected a substantial amount of ceramic, lithic and faunal debris. This site is situated on a small sand ridge adjacent to a marsh and a creek and was probably occupied as a summer hunting camp, taking advantage of the abundant muskrat populations in the area (R. Trider: personal communication). Of interest is the presence of Mixter-like wares suggesting a post-Younge Phase occupation at the site. These vessels are not common to sites north on Point Pelee and in the Leamington area. Indeed, there is also a lack of diagnostic Springwells Phase ceramics from sites on Pelee and Middle Islands. If, as discussed in the material culture section, the Younge Phase is followed directly by a people using Mixter wares rather than Springwells-like wares in the Sandusky Bay region of northern Ohio, then it is entirely possible that the occupation at Muriel Ryersee is from groups based along the south shore of Lake Erie. Certainly on Middle Island, which is closer to the American shore than to the Canadian shore, a southern origin for the Late Woodland materials discovered there has been suggested (Fox 1984d:9).

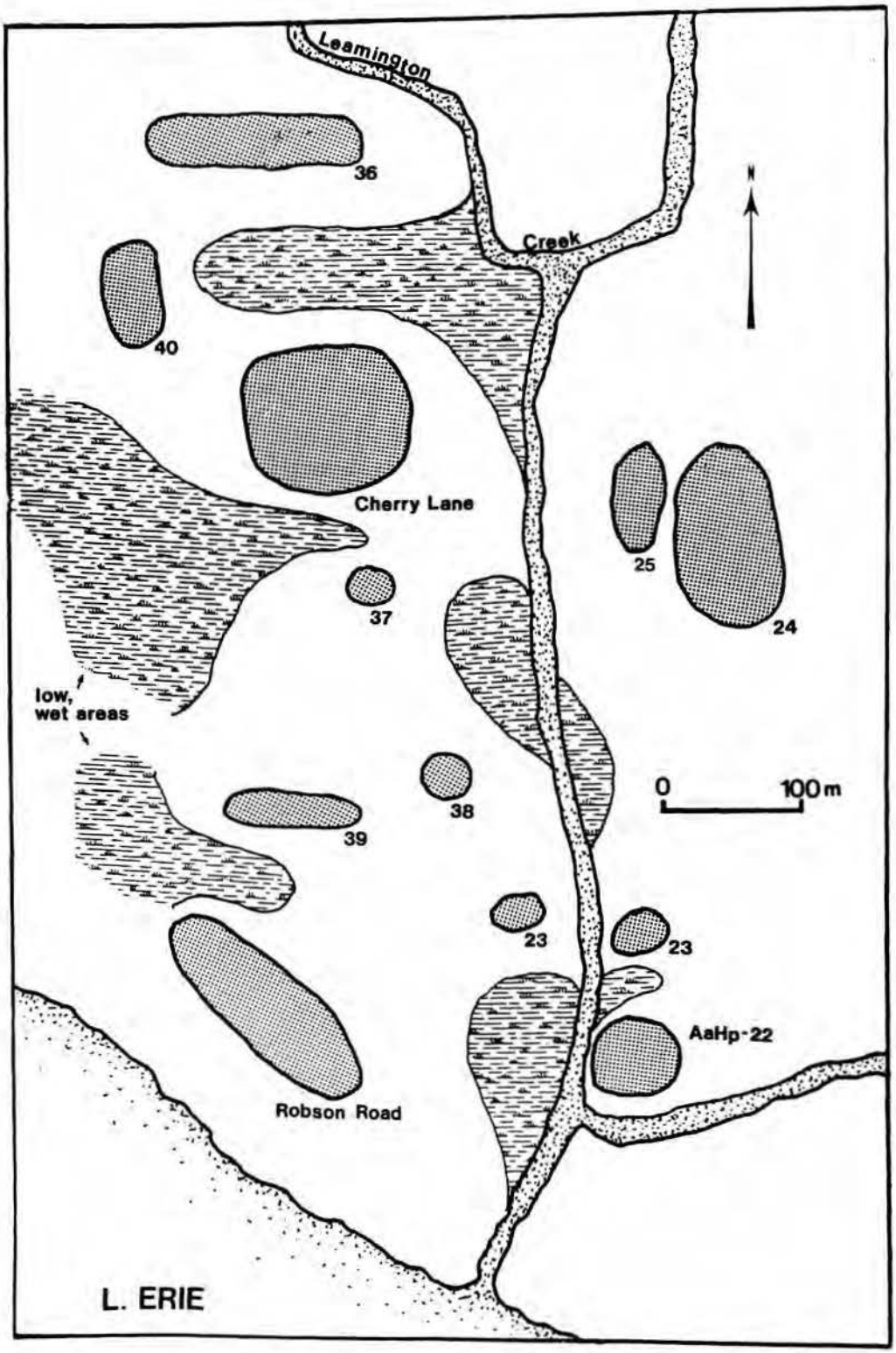

FIGURE 7.29: Leamington Creek Area Sites, Including Robson Road and Cherry Lane. With the possible exceptions of sites 24 and 25, all localities have yielded Late Woodland materials.

Southwestern Ontario River Drainages:

Warm weather Younge Phase sites along the major rivers of southwestern Ontario (Thames, Sydenham, St. Clair and Detroit), are poorly documented. Only the Krieger (Kidd 1954, 1956), and Dymock sites (Fox 1982a, 1982b) have been excavated, and the results of these excavations have been limited.

The Dymock site, situated just south of the Thames River in western Middlesex County (Figure 7.1), is reported to actually consist of two habitation areas on adjacent sandy terraces (Fox 1982a:3). A proper estimate for the size of this site is impossible, since most of it was destroyed when a local county road was put in some years prior to excavations (Fox 1982a:7). The site is unusual as part of the inventory of Younge Phase settlement data for southwestern Ontario. For instance, the site is much further east than most known Younge Phase sites along the Thames River. This "uniqueness," however, still needs to be confirmed through survey of the area, which is sorely lacking at present. Also, Fox (1982a) has suggested that the two habitation areas at Dymock were formal villages, each being surrounded by a palisade. Only one other palisade has been documented from a Younge Phase site in southwestern Ontario (Van Bemmel). In fact, single-rowed palisades are more the norm at contemporary Early Ontario Iroquoian sites further to the east (Williamson 1983b, 1985; see also this volume). It could be that the easterly location of Dymock, in relative close proximity to an Iroquoian community, necessitated the need for a palisade. However, an alternative interpretation favoured by the authors is that the palisade rows may in fact be portions of house walls. Certainly the row of posts on Dymock 1 (the lower component) may actually represent a short structure (Fox 1982a: Figure 1), not dissimilar in projected size and shape to the house documented from Cherry Lane. This would neither refute or confirm the notion of Dymock being two separate occupations although it would imply that the notion of Dymock being a "formal village" is likely not be the case. Unfortunately, road destruction of the majority of the site prevents us from ever obtaining definitive data from Dymock.

Faunal and floral information for Dymock indicate that the site was occupied during warm weather (M. Cooper 1982; Fox 1982a; Prevec 1981a). Large quantities of walleye and sucker from the site suggest that the occupants took advantage of spring spawning runs in the Thames River. Also present are deer skull fragments with new antler growth and the remains of a foetal fawn, further indicators of a spring occupation. The presence of turtle, pigeon and a young great blue heron provide evidence of a later, summer occupation at the site (Fox 1982b:9; Prevec 1981a). Also found were substantial quantities of maize and squash (M. Cooper 1982:6), as well as seeds from blackberry, strawberry, hawthorn, sumac and grasses, along with some butternut (M. Cooper 1982:7). These data argue for a varied number of activities being conducted in and around the Dymock site, reflecting a warm weather, diffuse subsistence pattern. The presence of cultigens suggest that crops may have been raised adjacent to the site, the only documented Younge Phase site in southwestern Ontario which clearly reflects such an activity. It is possible that Dymock functioned as a warm weather base camp, settled in the early spring to take advantage of fish spawning runs and to clear and plant fields, then probably occupied sporadically, or at least less intensively, over the summer, with the next intensive period of use occurring in late summer or early fall to harvest maize and to take advantage of immediate vicinity resources.

The Krieger site (Figure 7.1) is located east of Chatham by the Thames River, situated on the edge of a loamy-sand ridge (Kidd 1954:145). Only a small area was excavated, exposing a random scattering of 54 large storage pits (Kidd 1954:145). While impressive ceramic vessels dominated the collection from Krieger, fully half of the collection consisted of faunal remains (Kidd 1954:147). Unfortunately, as was the practice of the day, much of that material was left behind, and no detailed analysis of the remaining collection was conducted. Unknown quantities of deer, raccoon, grey squirrel, black bear, muskrat, dog, as well as turtle, several species of bird including turkey, and numerous unidentified fish species were all recovered (Kidd 1954:147-148). Floral remains from Krieger included 70 maize kernels and a grape seed (Kidd 1954:170).

Only one cold weather Younge Phase occupation has been excavated along river drainages, and this one, the Van Bemmel site (Figure 7.1), is actually off the Thames River and along a secondary creek, situated on a loamy-sand terrace (Sloan 1987). Excavations were carried out in a 40 x 20 metre area in 1987 and 1988 by the London Chapter of the Ontario Archaeological Society (Ferris 1989b). Excavations did not reveal a typical Western Basin

Late Woodland pattern of scattered storage pits. Rather small features, including a number of hearths, only a few storage pits, several small circular pits and a scattering of post moulds, were uncovered. Lying on top of these subsoil features was a black, greasy layer of soil, varying in thickness and rich in artifact debris. A large quantity of both ceramic and lithic material was found, along with a sizable quantity of mostly calcined and shattered deer bone (Prevec 1988d). While no definite house patterns could be identified, surrounding this central activity area was a single-rowed, partial palisade, perhaps established to provide shelter from the elements. The site appears to have been occupied for short periods but overlapping pits and post moulds in pits indicate that the site was re-visited on several occasions. Activities conducted on the site appear to have been intensive, as seen by artifact and faunal densities in a relatively small portion of the site. For instance, in one 4 x 4 metre area, excavations of ploughzone yielded 5 projectile point tips, 21 scrapers, and 53 utilized flakes. The several hearths on the site ringed this area, as did the greasy black layer (Ferris 1989b).

Van Bemmel likely represents a late fall hunting camp, where kills were processed and rendered into products that could be transported to winter camp sites, and used as supplies through the winter. The presence at this site of a large lithic tool assemblage, composed primarily of skinning tools and projectile points, is unknown for other Younge Phase sites in southwestern Ontario. However, at Van Bemmel such a tool kit would have been essential for processing deer kills, and if work was intensive in order to take advantage of a large number of kills during a peak hunting season (late fall), then a large quantity of wasted skinning and processing tools should be expected. Further evidence of processing at Van Bemmel includes the presence of hearths and the large quantity of fragmentary calcined bone, both of which suggest that kills were rendered into various products at the site. Finally, three small, circular pits filled with carbonized twigs and outer bark were documented at the site. It is interesting to note that this type of feature has been found on other prehistoric and historic Algonquian sites in southwestern Ontario and Michigan, and that they have been interpreted as smudge pits used for hide processing (Binford 1967; Ferris 1989a; R. Ford 1974a; I. Kenyon 1988; Murphy 1988a).

The scarcity of storage pits suggest that Van Bemmel was visited irregularly and was situated away from locales utilized during other periods of the seasonal round - if re-use of the site was not anticipated for some time, there would be no need to cache food or goods. At Van Bemmel, the substantial presence of both a lithic hunting-processing tool kit, as well as ceramic vessels and juvenile pottery, suggest that activities conducted at a fall hunt/processing camp were shared by all members of a family. It is probable that the Van Bemmel site was occupied by one or two extended families, who, when finished at the site, likely left for a winter camp, similar to that documented for the Springwells Phase at the Sherman site (see below).

That only three Younge Phase sites have been examined and reported for the river drainages of southwestern Ontario is disappointing, especially since collections from individuals such as Stan Wortner, David Crundwell and Etienne Vantomme for the Thames, and Ian Kenyon and Frank Vink for the Sydenham, have together documented dozens of Younge Phase sites. Furthermore, little work has been done on the St. Clair River, and recent investigations along the Detroit River also suggest a substantial Younge Phase presence in that area (Murphy 1988a; R. Johnson: personal communication). However, with our current lack of knowledge, it is difficult to say much about Younge Phase occupations along these rivers. If the Dymock site is the norm for river occupations, then it is possible, unlike in south Essex County, that Younge Phase peoples established more substantial base camps during warm weather periods. It is possible that Krieger represents another such site, as suggested by the abundance of faunal remains and presence of maize. However, Dymock's unique geographic position leaves open the possibility that it may be anomalous. For instance, it is possible that Krieger, similar to Robson Road, was established primarily to take advantage of species found in and around the Thames River. Whatever the warm weather pattern for river drainages, the Van Bemmel site suggests that occupations moved away from rivers at the start of cold weather, pausing to exploit and process the harvest of a fall hunt, before moving on to winter camps.

Younge Phase Settlement-Subsistence Summary

Younge Phase subsistence activities in southwestern Ontario appear to be largely a continuation of activities followed in earlier periods. Subsistence was based on a diffuse strategy of extraction, following a rather flexible

seasonal round which focused on resource rich areas. During warm weather months, Younge Phase peoples appear to have based their activities along lakeshores and major drainages. Cold weather saw these people move towards the interior, exploiting both nuts and deer, before moving to smaller, single family winter camps. While sites such as Dymock and Bruner Colasanti confirm that maize was a part of the Younge Phase diet, there is no indication that agriculture was a major part of the Younge Phase subsistence strategy. It is worth pointing out that, on a general level, the suggested subsistence pattern for the Younge Phase is similar to that identified for the Algonquian-speaking Ojibwa peoples who also occupied southwestern Ontario during the 18th and 19th centuries (Ferris et al. 1985; Ferris 1989a). While differences no doubt existed, the pattern of scheduling activities during the seasonal round and maintaining a flexible, diffuse pattern of subsistence, are strategy decisions shared by both these primarily hunting, gathering and fishing groups, who exploited roughly the same geographic and environmental region, albeit at different times in the past. The suggestion of a similar pattern of settlement-subsistence in the same region of southern Ontario suggests, contrary to what has been suggested elsewhere (Stothers, Graves and Redmond 1984), that the Western Basin Younge Phase peoples followed a more Algonquian-like than Iroquoian-like way of life.

There is little evidence at present to provide detailed community patterns during this period. It is probable that several individual family groups gathered during fish spawning runs in the spring, and shared warm weather site locales and resource rich areas. Probably several extended families would have made up a band which would have shared a common geographic area: this is the case at least during historic Ojibwa occupations of the same area (Ferris 1989a). However, the available archaeological data does not allow us to determine how large such a group would be, or how extensive their shared territory would have been. We do know, in light of the seasonal round proposed for these people, that southwestern Ontario possessed several regions characterized by abundant and diverse resources. What is currently needed is systematic research of the various resource rich areas which would have been attractive to these people.

Finally, while community patterns remain vague, it is clear that no formal village, in the sense defined by Noble (1975a), has yet been identified for the Younge Phase. Moreover, we doubt that such a site exists. The large, central villages identified for the contemporaneous Early Ontario Iroquoian peoples to the east (Williamson 1985; see also this volume) do not appear to be a part of the settlement pattern documented for the southwestern Ontario Younge Phase. This model is in contrast to a settlement-subsistence pattern proposed elsewhere for the Younge Phase (Stothers and Graves 1983; Stothers, Graves and Redmond 1984). However, their model is based on an assumption that Western Basin Younge Phase peoples were Iroquoian speaking, maintaining a largely Ontario Iroquoian settlement-subsistence strategy. The data available for the southwestern Ontario Younge Phase appears to contradict such a notion.

Springwells Phase Settlement-Subsistence

The settlement-subsistence strategies practiced during the Springwells Phase (A.D. 1200 to 1400) represent perhaps the most thoroughly documented for the Western Basin Tradition in southwestern Ontario. During this phase, the general warm season to cold season coalescence - dispersal pattern of the earlier Western Basin continues, although several significant modifications do occur. These changes primarily affected subsistence scheduling during the warm season in that Springwells Phase summer settlements appear to have been more intensively occupied, and groups may have remained near, or operated from, a single location throughout much of the growing season. Such changes are suggested by the appearance of more formal occupation areas with multiple house structures, increases in the recovery of maize cultigens, and the selection of site locations which provided optimum resource variability within a short distance of the settlement. Cold weather occupations still appears to parallel earlier patterns.

The Liahn I site provides the most thoroughly documented Springwells Phase warm weather occupation from southwestern Ontario (I. Kenyon 1988). Liahn I is located on the east bank of a creek about 2 kilometers east of Lake St. Clair (Figure 7.1). This region is notable for its lack of pronounced topography, and consists of wet, clay-loam soils, except along creeks where glacial outwash spilled over the stream beds depositing sand on the banks. Vegetation is characterized by upland forest associations dominated by beech, maple and sycamore on the sand ridg-

es by creeks; oak and black walnut on the bottomland soils along creek banks; and ash and elm swamp forest on the heavier clay-loams away from creek banks. Also, a band of long grass prairie is present slightly inland from the shore of Lake St. Clair. This complex vegetation pattern provides for considerable environmental diversity which was likely a major attraction to the Liahn I occupants, who established their site on one of the narrow sandy ridges along Rankin Creek (Figures 7.1 & 7.30). The location allowed easy access to forest, riverine, prairie and lakeshore habitats, and subsistence remains from the excavations reflect the utilization of these areas (I. Kenyon 1988). In particular, faunal remains point toward intensive exploitation of the lake with shallow water fish (i.e. bowfin and bass) the most common species harvested. Muskrat, raccoon and deer make up the majority of mammal remains present in the collection, with muskrat by far the most extensively exploited species. Among the other faunal remains recovered are several species suggesting a warm-weather occupation of the site, such as painted turtle, assorted snakes, wild turkey and waterfowl. Corn is the single floral species reported from the site, and while frequencies from the site may have been significant compared to other Western Basin occupations, this frequency is meager compared to yields reported from contemporaneous Iroquoian sites to the east (I. Kenyon 1988:20).

At Liahn I, several archaeological components are present, and the 1977 excavations focused on the center of the densest scatter of artifacts. The majority of material recovered dates to about the mid-point of the Springwells Phase, while later Wolf Phase ceramic vessels were also found in the southern third of the area investigated. Settlement data consisted of a mass of overlapping pit features confirming that portions of the site were likely used repeatedly over a number of seasons. Although partially obscured by this mass of features, a house structure was identified, oriented northwest-southeast (Figure 7.31). It measured 24 metres long by 7 metres wide, with straight-lined and clustered wall posts turning into rounded end walls. The house is firmly dated to the Springwells Phase as wall posts were found beneath Wolf Phase pit features and artifact concentrations. Substantial quantities of daub were recovered from many features, suggesting that structures at the site were likely covered with a clay layer or that extensive caulking was practiced. The Liahn I house represents the first convincing Western Basin structure identified since Emerson Greenman's work at the Younge site in 1935 (Greenman 1937), and suggests that this form of longhouse may have been the typical dwelling used at Springwells Phase summer occupations. Subsequent investigations of other Springwells Phase warm weather occupations have tended to support this observation (Lennox et al. 1989; Lennox n.d.b). While the extent of occupation can only be guessed at, it is probable that other house structures are present in the unexcavated portions of the site and that several families occupied Liahn I during its period of most intensive use in the summer.

Other evidence from the eastern shore of Lake St. Clair suggests that Springwells Phase groups extensively used this area, and the sand ridges along creeks emptying into the lake were favoured locations for these settlements. For instance, close to Liahn I is the multicomponent Rickley (Peterkin) site, which has yielded linear cord-impressed rimsherds suggesting a Springwells Phase occupation (Kroon 1975; Walstedt 1975; Williamson 1980a). Further south and east, high collared, complex tool impressed vessels indicative of the end of the Springwells Phase were recovered during amateur excavations at the Caron site. These findings suggest that a sequence of Springwells Phase settlements were located along the eastern shore of Lake St. Clair, utilizing nearly identical environmental settings as seen at Liahn I. Interestingly, both surveys and examinations of collections from the area indicate that earlier Riviere au Vase and Younge Phase occupations are poorly represented along the east shore of Lake St. Clair (F. Vink: personal communication), suggesting that intensive use of the area only began during the Springwells Phase. This Springwells focus on environmentally diverse areas is also supported by data obtained from other parts of southwestern Ontario. The emerging pattern is one of site selection based on maximizing the use of a specific locale during longer warm weather occupations by more sedentary groups. The more informal seasonal mobility practiced during earlier periods seems to have been phased out. This shift represents the first significant alteration in Western Basin settlement-subsistence strategies identified for the Late Woodland of southwestern Ontario.

Another Springwells Phase site reflecting associations with an area of diverse environmental habitats is Lasalle-Lucier, located at the junction of a small creek and the Detroit River (Figure 7.1). This site is situated on a low sandy terrace, in a region characterized by long grass prairies, oak savannas and oak-hickory forests, which thrive on the sandy soils of northwestern Essex County (Maycock and Hills 1970). A large area of the site was found under the road base of a local highway during construction work, and portions of the site had been disturbed

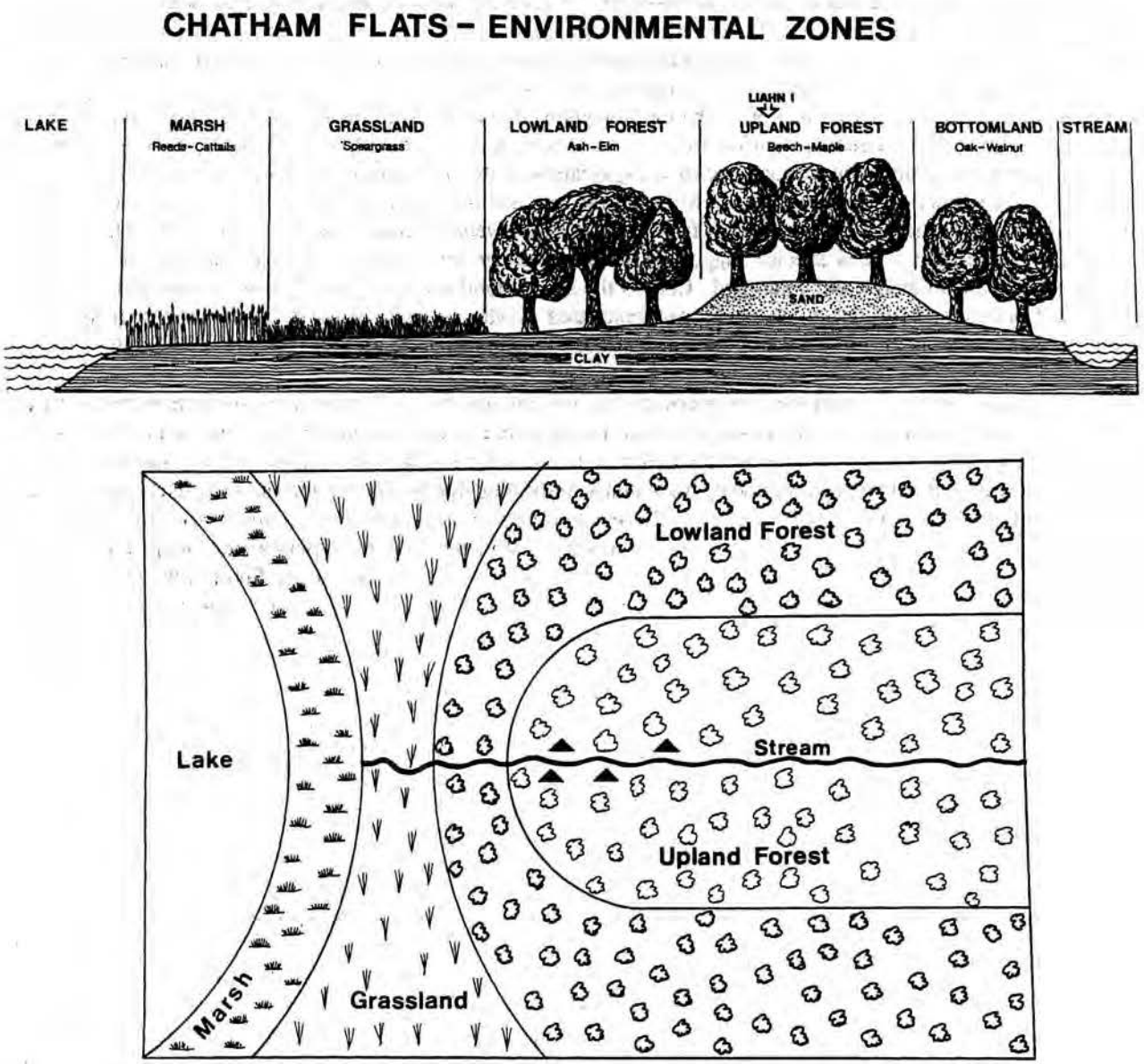

FIGURE 7.30: Environmental Zones Around the Liahn I Site Reflecting Typical Springwells Phase Emphasis on Environmental Diversity. Illustrations by Ian Kenyon.

by roadbed removal and sewer trenching (Lennox et al. 1989). Testing for the eastern extent of the site beyond the highway revealed that a portion was undisturbed, albeit under front lawns. Salvage efforts concentrated on that part of the site under the highway, so only a limited portion of the overall occupation was uncovered. Nonetheless, data recovered suggests that Lasalle-Lucier was a small settlement surrounded by a circular palisade (Figure 7.32). One or more straight-walled houses within the enclosure, oriented east-west, are suggested by four or five rows of posts in the northern half of the excavated area. Numerous large, flat bottomed storage features were distributed across the site, although little domestic refuse was found in the surviving lower levels of these pits. Though few diagnostic artifacts were recovered, a low collared, cordmarked rim and cord roughened and slip roughened bodysherds place the component early in the Springwells Phase.

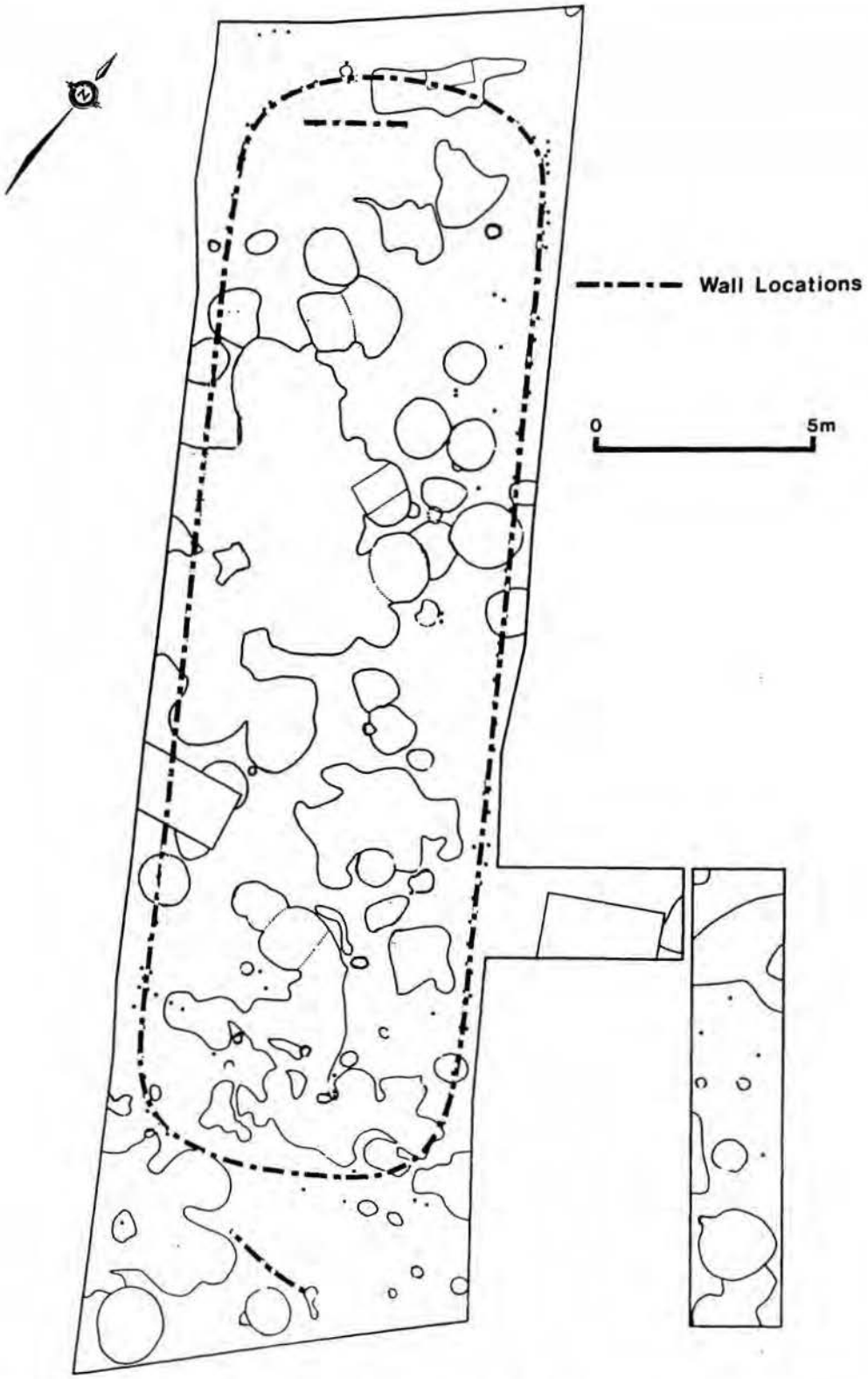

FIGURE 7.31: Map of the Longhouse Documented at the Liahn I Site. Illustration by Ian Kenyon.

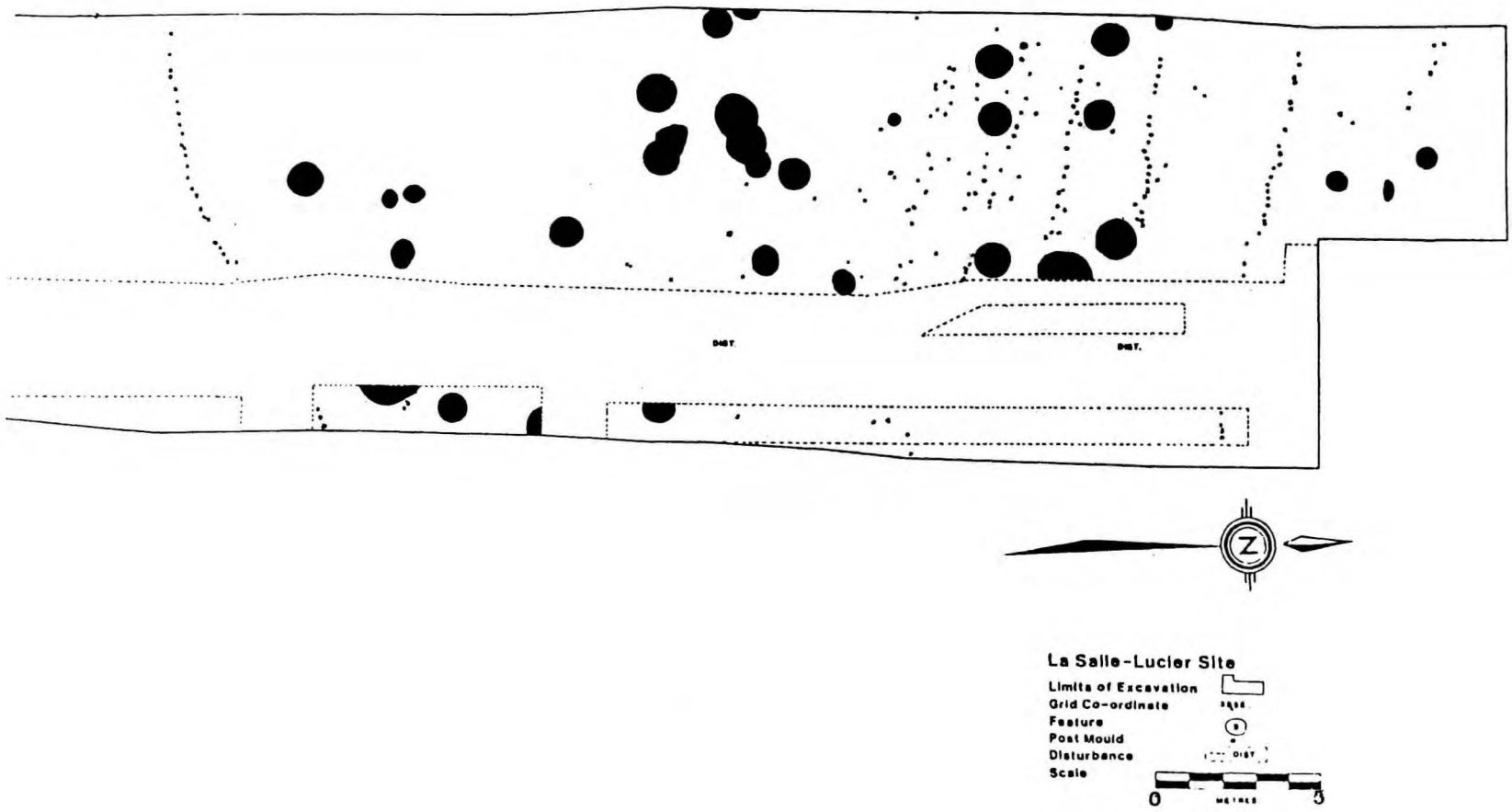

FIGURE 7.32: Northern Portion of the LaSalle-Lucier Excavations. Map provided by Paul Lennox and the Ontario Ministry of Transportation.

Not surprisingly, faunal remains from the site are dominated by fish, the majority of which are bowfin, drum and bullhead. Mammal remains consisted of deer, raccoon and squirrel. Floral remains were limited to a few charred corn and hickory nut fragments. Thus, data on seasonality are limited but a spring-summer-fall occupation is offered.

The surviving settlement data does suggest that the site is perhaps an early example of a Western Basin nucleated settlement. A palisade surrounding the structures at Lasalle-Lucier may herald the transition to a more sedentary form of summer settlement during the Springwells Phase. Locational, faunal and floral data suggest the site was similar in function to Liahn I, representing a warm weather settlement located within an optimal environmental situation, where forest, prairie and river resources could be easily exploited and combined with maize cultivation.

A final Springwells Phase site documented from southwestern Ontario which provides settlement data is situated near the city of Windsor (Figure 7.1), and has been referred to as Lucier (P. Reid 1978b; Wintemberg 1936b; P. Wright 1976), and as E.C. Row (Lennox n.d.b). This site is found near a tributary of Turkey Creek, about 5 kilometers inland from the Detroit River. Lucier received limited investigation by Wintemberg in 1935, following local reports of burials at the site. Wintemberg recovered 25 burials and reported briefly on the post mortem skeletal alteration observed for several of the individuals (Wintemberg 1936b). In 1984, prior to construction of an interchange ramp, mechanical stripping of topsoil revealed post patterns representing several longhouse structures, pit features, and a number of burials (Lennox n.d.b). Portions of Wintemberg's trenches, or perhaps other, unreported excavations, were also identified. In all, the mid or end sections of at least four superimposed longhouse structures were found (Figure 7.33). The houses display straight lines of wall posts with an east-west orientation. Each house is well over 25 metres in length, and about 8 metres wide. The excavated area is also distinguished by the complete absence of large, circular pit features characteristic of other Western Basin sites, and only a few small, relatively sterile pits were noted near or within houses. A major feature of the site was a concentration of human burials north of the densest area of house wall overlap. Six burial features were identified in 1984, although a series of trenches, likely excavated by Wintemberg, may have removed many additional burials from this area. The frequency of recorded burials and the absence of occupational debris and pit features place Lucier into a unique settlement category, where the major function of the site was related to mortuary practices. The implications of the structures from Lucier for Western Basin mortuary practices will be discussed later in this paper.

Southeastern Essex County has also revealed ample evidence of warm weather Springwells Phase occupations although investigated examples have all proven to be multi-component. While Robson Road appears to be a morass of occupations, and Bruner-Colasanti is dominated by Younge Phase occupations, excavations at the Dick site (P. Reid 1983a, 1983b) indicated that it was most intensely occupied during the early Springwells Phase. This site is located on the west side of Sturgeon Creek, approximately 2 kilometers north of Lake Erie and east of the Leamington Creek site cluster (Figure 7.1). Between the site and the lake, the drowned estuary at the mouth of Sturgeon Creek was bordered by a low-lying marsh and shallow bays. Unfortunately, the Dick site had been disturbed by agricultural activities extending back into the 19th century, and defining settlement-subsistence patterns for each component represented at the site is nearly impossible. However, it is worth noting that a total of 41 Springwells Phase vessels were recovered, representing the largest sample identified at a southwestern Ontario site of this phase. As well, large quantities of carbonized corn were recovered, and daub fragments from the site may imply that structures similar to that from Liahn I were present. Thus, while data is limited, it may be that the Dick site represents a fairly substantial Springwells Phase warm weather occupation similar to either Liahn I or Lasalle-Lucier.

Several other sites have been recorded near the Dick site. Small camp occupations related to the Springwells Phase along Leamington Creek may reflect a continuing short term, seasonally intensive use of this area (Ferris and Mayer 1990; I. Kenyon et al. 1988). At Bruner-Colasanti, Springwells occupations are similar to those of the earlier Younge Phase (see above), implying that the fall subsistence activities conducted at Bruner-Colasanti were not altered during the Springwells Phase.

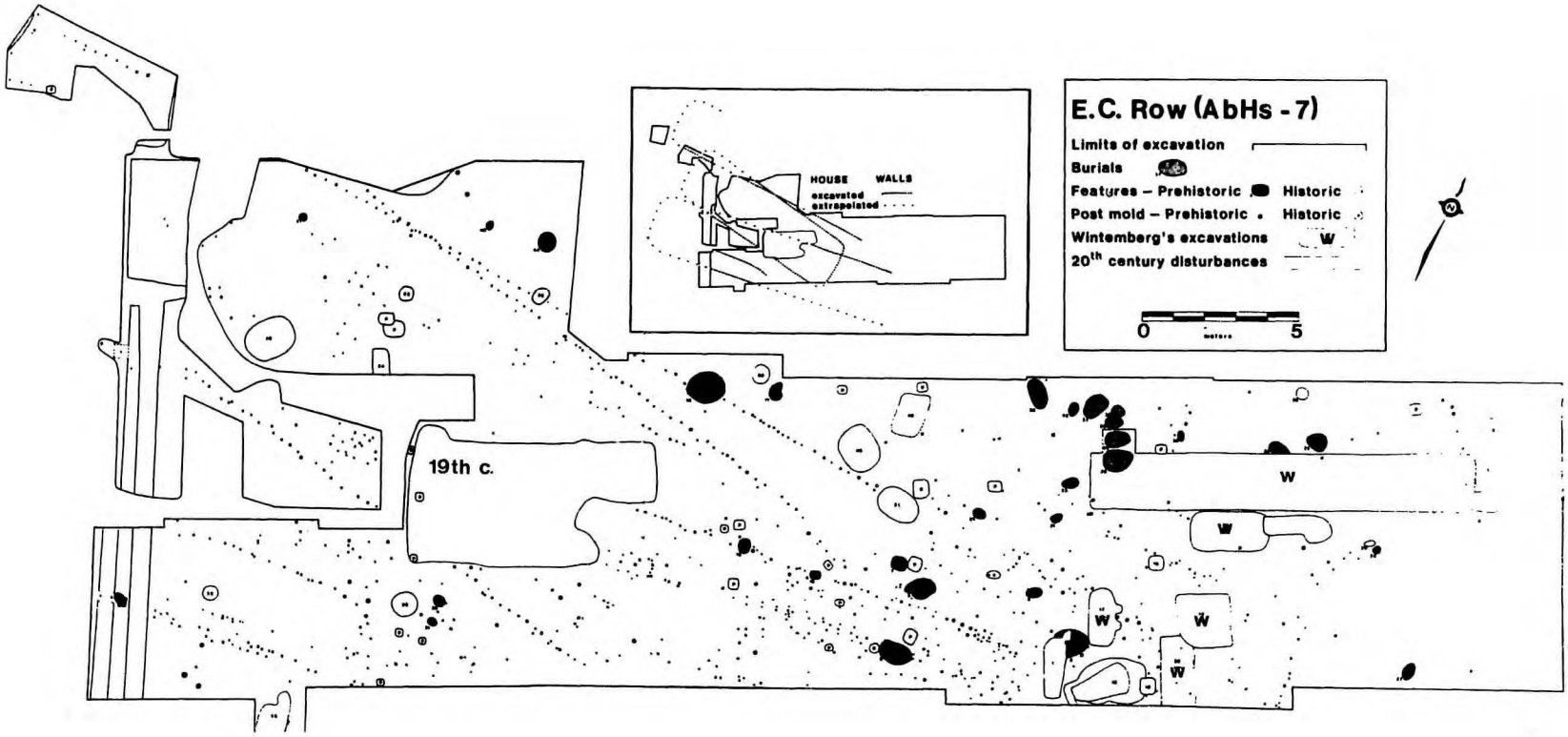

FIGURE 7.33: Excavations of the Lucier-E.C. Row Site. Map provided by Paul Lennox and the Ontario Ministry of Transportation.

Near the Dick site on the other side of Sturgeon Creek an earthwork has been reported associated with late Springwells Phase ceramics (P. Reid 1983a:1). While little information is available on this site, it does appear that earthworked sites in southwestern Ontario first begin to appear in southeastern Essex County. A small surface collection was recovered from the Iler or "Fort" site (Figure 7.34), and collared, cord-roughened rims possibly suggest a late Springwells Phase occupation (Carey 1978; P. Reid 1981: Plate 29). Near the Iler site on Cedar Creek is the Cedar Creek Earthworks, perhaps the last undisturbed Western Basin earthworked site left in southwestern Ontario. While the site has been investigated on a number of occasions, a temporal placement has been difficult to assign, as cultural refuse within the earthring seems to be sparse (e.g. Knight and Ramsden n.d.). This situation has also been noted on early earthworks in Michigan (Carruthers 1969; Krakker 1983), and may be the result of limited periods of occupation or possibly idiosyncratic refuse depositional patterns.

Earthwork encircled settlements appear throughout the Western Basin area by the end of the Springwells Phase and continue into the Wolf Phase (Figure 7.34). At present there are little data available to use in interpreting the function or seasonality of these sites, or in determining why they appear late in the Springwells Phase. This lack of data represents a significant gap in our understanding of Western Basin development for this period. This is particularly frustrating since earthworked sites become the norm during the succeeding Wolf Phase, and knowing the reasons behind the origin of this settlement type could go a long way to explaining some of the cultural developments which occurred during this period.

A final region in southwestern Ontario known to have a high number of Springwells Phase occupations is located near the western edge of the Bothwell Sand Plain along the lower Thames and lower Sydenham River drainages in Kent County. Unfortunately, sites such as Depencier-Shaw (Knight and Ramsden n.d.), and Bellamy (Murphy 1987) have received only limited investigation and comparative settlement and seasonality data is minimal. As well, uninvestigated but documented Springwells Phase occupations are known along the lower Thames River from about Thamesville west (D. Crundwell, S. Wortner: personal communications), and along the Lower Sydenham (I. Kenyon, F. Vink: personal communications.). While most Younge Phase sites, such as Dymock and Krieger, appear situated close to the river, some of the Springwells Phase sites documented in local collections tend to be located on sand ridges near small drainages upwards of one or two kilometers inland from main river channels. This may reflect a developing trend towards interior occupations during the Springwells Phase, or alternatively these sites may reflect an altogether distinct pattern related to a form of cold weather occupation, not dissimilar to that seen for the earlier Younge Phase. Recent work on one of these interior sites (Murphy 1989) has significantly advanced our understanding of Springwells Phase and indeed Western Basin Tradition winter occupations in southwestern Ontario.

The Sherman site is located on a small sand knoll (dune?) northeast of Thamesville, about 2 kilometers north of the Thames River and 300 metres east of a small creek (Figure 7.1). Extensive swamp areas are located to the west and north of the site. In 1986, following a single season of cultivation and wind erosion, a small cluster of cultural debris was exposed on the western edge of the knoll. Diagnostic Springwells Phase ceramics suggested that Sherman might be a rare example of a single component Western Basin Tradition occupation. Topsoil screening over the artifact concentration exposed 14 pit features, 2 hearths and a post mould pattern representing a 7 x 5 metre house structure (Figure 7.35). Most of the features were found in or adjacent to the house, although one pit situated to the southeast contained lenses of ash and fired soil and large amounts of domestic refuse.

The oval house wall pattern consisted of 64 posts, generally placed 10 to 12 cm apart. The corners of the structure were strengthened with a large post or a double set of smaller posts. Evidence of daub was not recovered, and interior posts representing roof supports or bunk lines were absent. Inside the house, a large, shallow post was placed at both the east and west ends of the structure, and together likely functioned as an upright for a center crosspole. Between these posts were two hearths, and between these were a series of small pit features. Four of these features contained ash, charcoal and domestic refuse, while another was completely filled with the upright, plough-truncated base of a large, bag-shaped ceramic vessel. This pot contained both calcined and non-calcined bone fragments of deer, rabbit and raccoon (Prevec 1988a). Perhaps the other features in the cluster also functioned as former "pot-holders", and this evidence may thus explain the purpose of elongated Western Basin ceramic vessels. The fea-

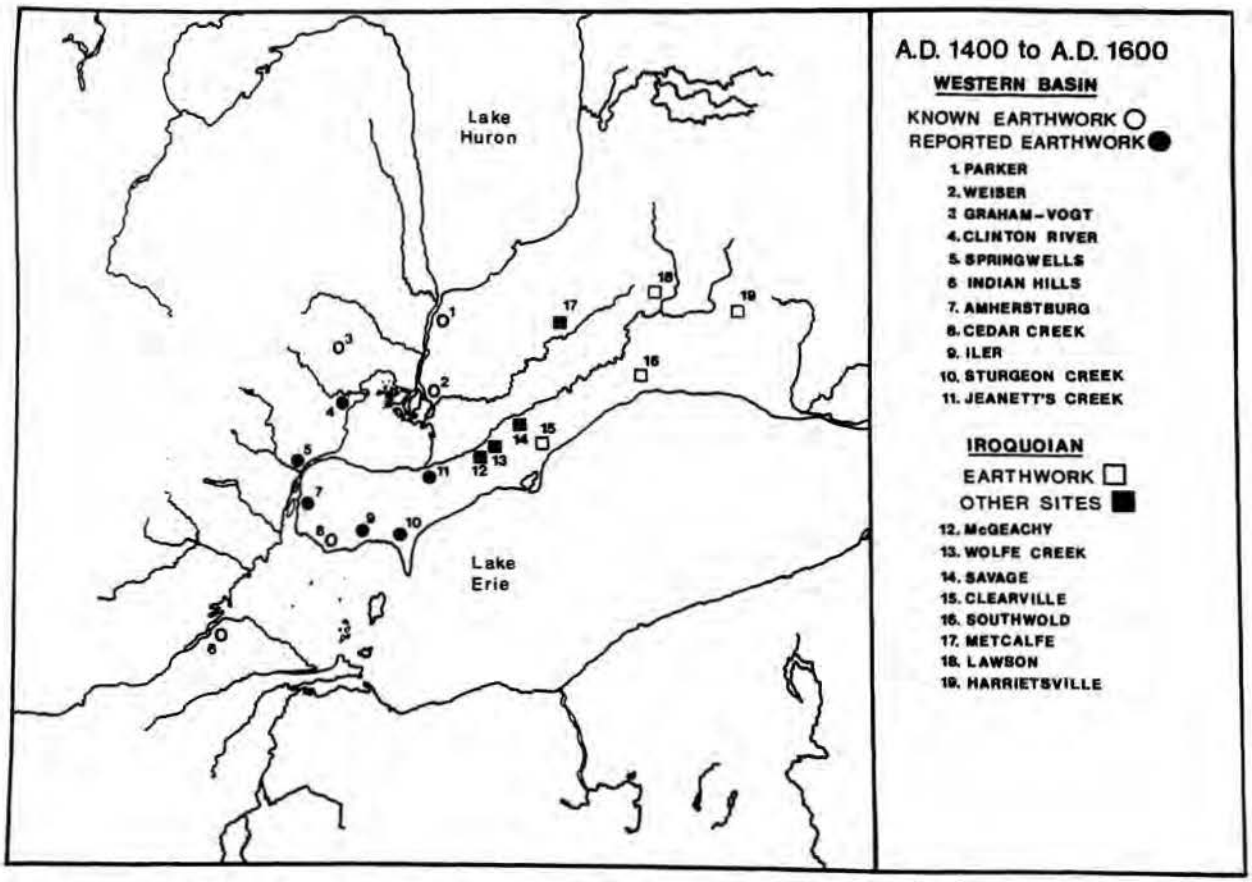

FIGURE 7.34: Map of Known and Reputed Earthworked Locations in the Western Basin Region, Along With Known Ontario Iroquoian Tradition Sites in Region.

tures in the eastern half of the house, with the exception of one, all proved to be shallow and relatively sterile. A large, straight-sided and deep storage pit was located outside the house, immediately adjacent to the eastern-oriented doorway. This pit likely served as "cold storage" for food. Finally, the refuse pit some distance to the southeast of the house did yield ceramic cross-mends with features within the structure, confirming the contemporaniety of these two areas.

While close to 6000 faunal remains were recovered during excavations, the identification of just 11 species reflects the limited range of animals exploited (Prevec 1988a). White-tailed deer remains comprised the majority of mammal bone, with raccoon, squirrel and rabbit also present. A minimum number of 2 deer and 2 raccoon are indicated with all body portions of these animals present in the sample (Prevec 1988d:4), suggesting that complete carcasses were transported to the site. Fish are represented by small frequencies of sucker, walleye and perch. Wild turkey is also represented. A preliminary floral analysis has noted a relatively large frequency of charred black walnut shell, and more limited quantities of maize. The faunal and floral information recovered, as well as the size and locale of the Sherman structure, suggest that the site was occupied during the coldest months of the year, and likely occupied by a single family. Thus, the Sherman site documents for the first time a well preserved example of a Western Basin winter cabin.

Comparative prehistoric analogues are absent for the Sherman house. However, it closely conforms to the traditional "winter cabin" or wigwam reported for historic Central Algonquian groups such as the Sauk (Skinner

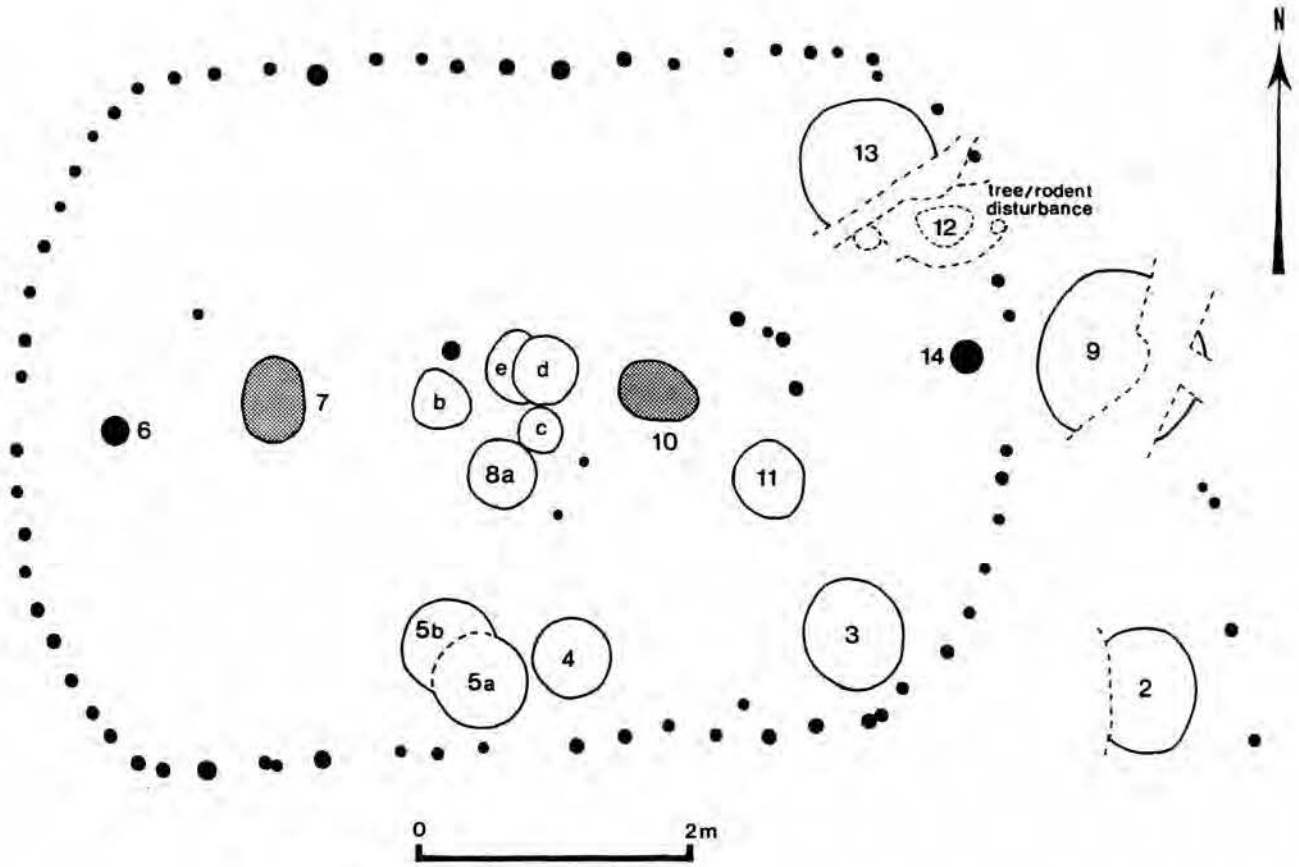

FIGURE 7.35: Map of the Sherman Site Structure.

1925:124); Fox (Forsyth 1912:227-228); and Kickapoo (Latorre and Latorre 1976:40-41; Ritzenthaler and Peterson 1956:30-31; see also Callender 1978a:637, 1978b:649; Callender et al. 1978:658; Goddard 1978:671). This literature describes Central Algonquian settlement and subsistence practices, particularly relating to winter cabins. Usually erected in October and occupied until March, these cabins tended to be oval or rectangular in plan, and 7 to 8 metres in length by 5 metres wide. The walls were constructed of small saplings planted upright in the ground and tied at the top to form a low, domed roof. The walls and roof were covered with bark slabs or reed mats. The entranceway tended to be located at the eastern long axis of the building. Inside, two poles were placed along the mid-line at the east and west end of the house, holding a cross-bar from which kettles and cooking pots were hung over the hearth, as well as foods. A cooking-heating hearth tended to be located near the center of the structure, and much of the day-to-day food preparation and eating activities took place in this area. Reed mats were placed on the ground along the south and north walls for sitting and sleeping, although the west end of the structure could also

have been used as a sleeping area, and the northern end of the house was sometimes used for storage (Forsyth 1912:227; Ritzenthaler and Peterson 1956:30-31; Skinner 1925:124-125). This form of winter house or wigwam was still in use among the more conservative Central Algonquian groups at the turn of the last century (Callender 1978a:637, 1978b:649).

The large number of similarities between the Sherman site structure and historic Central Algonquian winter houses are quite impressive. These similarities include size, construction technique, east-west orientation, eastern doorway, interior configuration, mid-line poles, central hearths, and the bare sleeping areas to the rear of the house. These parallels suggest more than mere coincidence, and further supports our claim that Western Basin peoples of southwestern Ontario were related to Central Algonquians, rather than to Ontario Iroquoians. It should also be pointed out that the Sherman structure has no obvious analogues on Ontario Iroquoian sites. During the contemporaneous Middle Ontario Iroquoian period to the east, small house structures have not been reported from any site excavations (see Dodd et al: this volume). Additionally, small house structures from the Early Iroquoian period (e.g. Fox 1976), or from the later prehistoric Neutral period (e.g. W.R. Fitzgerald 1982b; Lennox 1984a; Pearce 1983; Pearce and Catsburg 1985; M. Wright 1981) differ markedly from the Sherman site example in characteristics such as size, internal configuration of features, and orientation. Furthermore, almost all of the earlier and later Iroquoian examples of small houses occur within larger villages -- not as isolated occurrences. An Iroquoian site type equivalent to Sherman has not yet been documented.

A model of dispersed, extended family winter occupation has been proposed for the Western Basin Late Woodland previously (Ferris et al. 1985:19; Ferris 1989a), based largely on patterns documented for Ojibwa groups occupying southwestern Ontario during the late historic period. Additional archaeological examples are required to confirm such a proposal, however, it is more than likely that the use of a generic "pan"-Algonquian winter cabin will prove to be the norm for Western Basin peoples in southwestern Ontario. What still must be answered is whether the isolated, single-extended family occupation of the Sherman site was the preferred cold weather community pattern during the Springwells and earlier phases. Further research may well reveal variations in frequency and distribution of cabins at winter-occupied sites, but the size, shape and orientation of the structures are expected to remain relatively constant to that documented at Sherman.

Springwells Phase Settlement-Subsistence Summary

In general, settlement-subsistence developments during the Springwells Phase appear to reflect a continuation of trends identified for the first half of the Western Basin Tradition. Subsistence emphasis continued to center around a diffuse pattern of exploitation. However, the increasing use of cultigens appears to have led to modifications in warm weather settlement. At sites like Liahn I and Lasalle-Lucier, settlement patterns suggest more formalized living areas, with evidence of longhouses and palisades. Along with this development, warm weather communities were larger than those during earlier periods, perhaps reflecting the coalescence of several smaller, lineage-based groups which had remained more autonomous during the preceding Younge Phase. The reason for this shift may have been a desire to incorporate maize horticulture into the range of subsistence activities pursued during warm weather.

Nonetheless, an agricultural shift did not lead to a wholesale abandonment of warm weather hunting and fishing, although balancing the need to be able to move from one extraction locale to another while being able to remain at a fixed locale in order to maintain fields of maize and other cultigens had to be achieved. It is possible this was partly achieved through some division of labour at summer base sites. Also, a significant part of the solution to balancing old and new needs was achieved by redefining site location criteria. Sites like Liahn I are situated in locales that provide easy access to forest, prairie, marsh, shore edge and open water environments from which people could harvest a wide range of resources (I. Kenyon 1988). Consequently, extraction locales near sites like Liahn I, Lasalle-Lucier or even Dick, which were either rich in resources for a seasonally specific period of time, or rich throughout the summer, could be visited by any number of the residents of these sites without abandoning the base settlement for long periods. As well, sites like Robson Road and Bruner-Colasanti attest to the ability of Springwells period groups to maintain seasonal use of key extraction locales. Sites like Sherman also indicate that, despite

the establishment of villages during warm weather, Springwells Phase peoples continued to practice cold weather dispersal into small family groups.

These changes in site locale criteria during the early Springwells Phase appears to have caused a shift in the use of some regions of southwestern Ontario. For instance, the east side of Lake St. Clair is not known for substantial Younge or Riviere au Vase Phase occupations, but is marked by numerous Springwells Phase sites. Changing settlement requirements likely made this region ideally suited for intensive warm weather settlement. While it is impossible to identify the area from which the Lake St. Clair Springwells peoples came from, it is worth noting that easterly occupations of the Western Basin Tradition appears to contract during the Springwells Phase, with the Sherman site being the most easterly Springwells Phase occupation known at present. If Sherman represents the type of Springwells Phase site found along this part of the Thames drainage, then it may be that the most easterly areas were only used during periods of cold weather. While sites in the area still require proper investigation, it would be worthwhile to examine the ceramic trends at sites like Sherman and to compare them to the warm weather occupations on the east side of Lake St. Clair. It may be that the peoples occupying the east Lake St. Clair shore were descendants of Thames River groups who moved out of that drainage at the end of the Younge Phase. Winter occupations of sites like Sherman may then represent Springwells Phase peoples returning to traditional hunting grounds during winter months. While speculation at present, this underscores the need to begin to systematically examine the regional occupations of the Western Basin Tradition Late Woodland, in order to better understand the data already documented.

By the end of the Springwells Phase, large settlements begin to develop earthworked enclosures. It is perhaps no coincidence that at about the same time, Iroquoian occupations appear to settle around the Thamesville region of the Thames River drainage, as well as perhaps move west along the Lake Erie shore, and into the Sydenham and Ausable drainages (Murphy 1988b; W. Fox, W. Hagerty, S. Wortner: personal communications). This movement westward culminated in the 16th century with sites like Wolfe Creek and Smith in the Chatham area, and was probably the major cause for Western Basin abandonment of southwestern Ontario by the end of the Wolf Phase (see below). It may be that Iroquoian use of the eastern and central portions of the Bothwell Sand Plain during the first half of the Springwells Phase may not have been much of a threat to Western Basin peoples (particularly if the region was only used during the winter by single families). However, by the end of the Springwells Phase, Iroquoian encroachment into Western Basin territory was likely a serious concern and may have been the impetus for building earthworks. Continuing conflicts between Iroquoian and Western Basin peoples would become a major influence on social developments during the next, and last Western Basin phase of occupation in southwestern Ontario.

Wolf Phase Settlement-Subsistence

The settlement-subsistence patterns of the final prehistoric occupation in southwestern Ontario is the least understood. Only a few important sites have been partially excavated or examined, although in most cases this work provided little information which could answer developmental problems or questions of seasonality. Furthermore, while the direct historic approach has greatly aided researchers of the Ontario Iroquoian Tradition to the east, where interpretations of the final prehistoric period have relied heavily on written accounts of the historic Huron and Neutral, extreme southwestern Ontario was without an indigenous Native population by the early 17th century, and thus lacks any direct historic analogues (Brose 1971). Finally, during the Wolf Phase sites were fewer in number; concentrated along the Ontario-Michigan border; and tended to be situated at locales conducive to modern urban development. Consequently the potential site database for this period is extremely sparse, from which the few diagnostic sites examined have been badly disturbed or largely destroyed, making valid interpretations difficult.

Despite these limitations some observations can be made. At present, Wolf Phase occupations are known only from the extreme western ends of Essex, Kent and Lambton Counties along the east shores of the Detroit River through to the upper St. Clair River. Other researchers have interpreted this area of Wolf Phase occupation as representing a tentative intrusion into southwestern Ontario of invading Sandusky peoples from northwestern Ohio (e.g. Stothers 1981; Stothers and Abel 1989; Stothers, Graves and Conway 1984; Stothers, Graves and Redmond 1984).

However, we would argue that the Wolf Phase represents a continuous cultural development from the earlier Springwells Phase. Consequently, Wolf Phase site location is interpreted here as being a reflection of area occupied - in essence an abandonment of most of southwestern Ontario by A.D. 1400. This dramatic reduction in territorial use coincides with a western expansion of Iroquoian peoples along the Thames River and Lake Erie. These western Ontario Iroquoians moved onto and occupied the Bothwell Sand Plain between approximately A.D. 1300 and 1550. Sites known from the 16th century are located around the Chatham area, and appear to represent large and possibly earthwork enclosed and palisaded villages (Foster 1982a; see also Lennox and Fitzgerald: this volume). Recent evidence also suggests that late prehistoric Iroquoians were utilizing areas as far west as the southern end of Walpole Island, likely for seasonal extractive purposes (N. Adams 1989). Unfortunately, this westward expansion of Iroquoian peoples into Kent County has received little attention, and only three studies have focused on these Iroquoian "frontier" sites (Foster 1982a; Jury 1941; Murphy 1988b). It is our belief that a number of the settlement trends identified for the Wolf Phase are likely direct responses to this increased proximity to Iroquoian peoples.

While Wolf Phase occupations are primarily known from the north Lake St. Clair - St. Clair River area, a few distinctive Wolf Phase ceramic vessels, notably of the Parker Festooned type, have been reported for the Windsor and south Essex regions, although exact locations are not known. In 1936, while working on the Lucier-E.c. Row site in Windsor, Wintemberg (1936b) documented a complete Parker Festooned vessel, reportedly discovered nearby, and Thomas Lee reports finding festooned sherds on a small site near Kingsville, in south Essex County (T. Lee 1958:17). More recent work at the Lucier-E.C. Row site has failed to recover Parker Festooned material (Lennox n.d.b; P. Reid 1978b; P. Wright 1976), while surveys of Essex County have failed to note Wolf Phase sites (Carey 1978; 1979; P. Reid 1979; Walstedt 1980), although unconfirmed reports suggest that Parker Festooned rims have been located at the Laramie site, near Kingsville (D. Carey, W. Fox: personal communications). Given the above, it would appear that Wolf Phase occupations in this area may have only occurred during the earliest stages of the phase (explaining the few Parker Festooned findings).

Several Wolf Phase sites are known from the north Lake St. Clair - St. Clair River area, and likely represent a development distinct from anything which occurred in Essex County. Ceramic continuity from Springwells Phase sites in the area suggest that the Wolf Phase manifestation around Lake St. Clair and the St. Clair River resulted from local developments. These sites appear to be part of a larger concentration of Wolf Phase sites on the Michigan side of the St. Clair River (Figure 7.1), where there are larger streams and a much greater topographic variability. Thus, the Ontario sites may simply represent an eastern, perhaps seasonal extent of this larger Wolf Phase group. Of the Ontario sites, the Parker Earthwork, Weiser and Libby all appear to be villages, while smaller, seasonal camps are known from Liahn I and Walpole Island (N. Adams 1987, 1989; I. Kenyon 1988). Except for the components on Walpole Island, these sites are now largely destroyed.

The Parker Earthwork, located inland from the St. Clair River (Figure 7.1), was originally mapped by David Boyle in 1891, when the site's earthring and associated ditch were largely intact (Boyle 1902). Boyle was intrigued by the site's location and felt that it was well-hidden, accessible only by a small stream a kilometer to the north (Boyle 1902:34). Further work was done on the site between 1950 and 1956, when Thomas Lee conducted a series of test excavations (T. Lee 1958). After that a few avocational investigations were conducted (e.g. Axelson 1964). Unfortunately, the site was partially destroyed in 1976 (Killan 1983:191), and the remainder of the site is adjacent to a chemical holding pond, thus prohibiting access.

The site's earthwork was oval (Figure 7.36). The wall measured 100 by 53 metres from crown to crown, and most of the embankment was between 4.2 and 4.8 metres wide and 0.5 to 1.0 metre high (T. Lee 1958:5-6). A small stream fed by a spring provided water and T. Lee found some evidence that the stream may have been diverted to flood the external borrow ditch encircling the earthwork (1958:5). Significant features of the site were four circular mounds at the north end outside the earthring, which measured four metres around and about 0.3 metres high. These were reported to have contained burials which were looted. T. Lee excavated three trenches, three feet wide, which crossed much of the southern area of the enclosure (1958:9; see Figure 7.36). These trenches crossed a number of shallow basin pit features. T. Lee encountered a few human cranial fragments and near the western edge of the earthring found two parallel rows of posts, 7 metres apart. These posts may represent longhouse side walls, but the

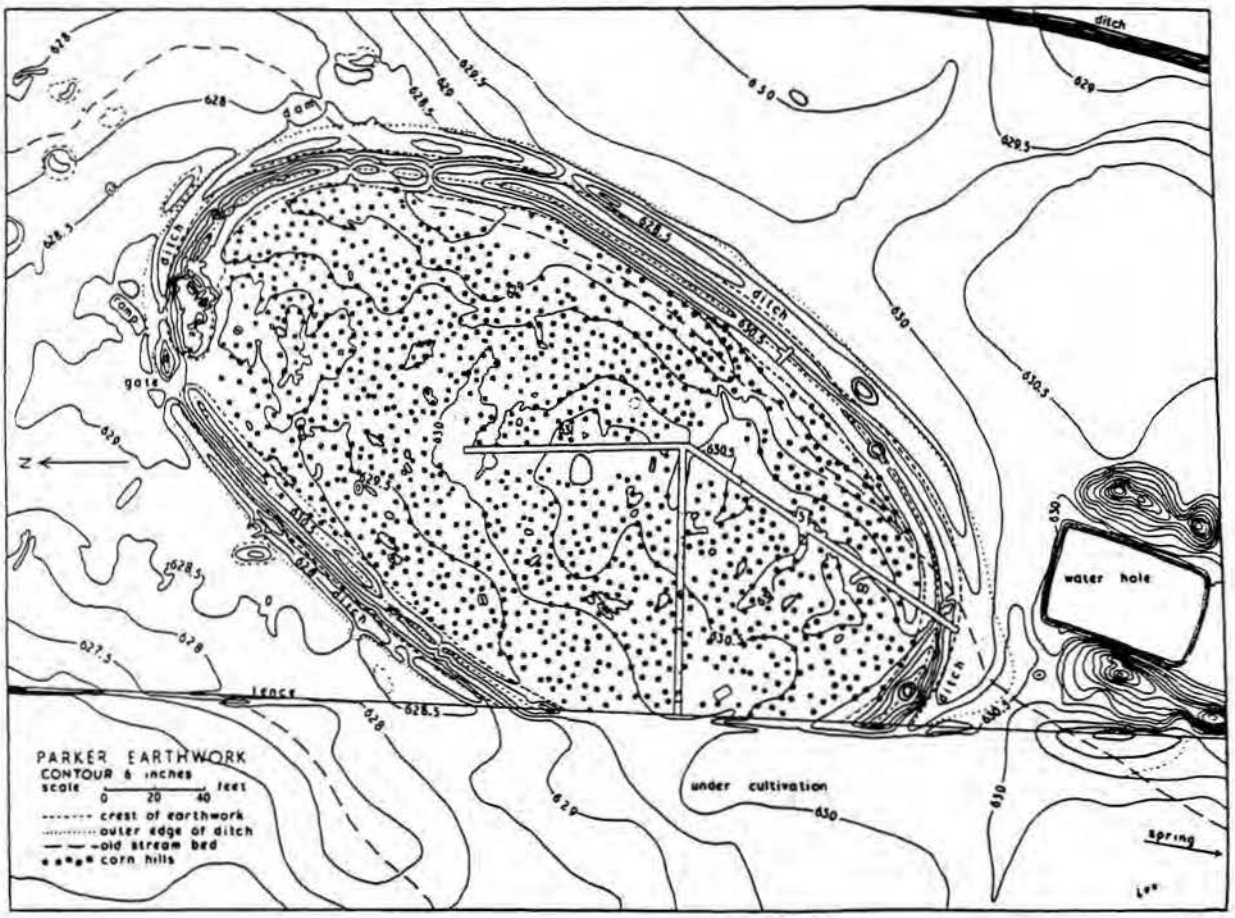

FIGURE 7.36: Map of Thomas Lee's Investigations of the Parker Earthwork Site. Reproduced with the permission of the Society for Pennsylvania Archaeology.

data is too meager to infer house form or size. Artifact densities within the enclosure were not prolific, with approximately 2000 ceramic fragments and 1000 lithics recovered. Floral remains are represented only by a few charred corn kernals, while faunal material was abundant, with fish bone dominating, although deer, raccoon and squirrel remains were also common (T. Lee 1958:11, 13).

Interpreting the seasonality and function of this site raises a myriad of questions which cannot be answered from the limited information available. Earlier Western Basin Tradition occupations are thought to be entirely seasonal in extent but the Parker Earthwork would not appear to fit well into such a pattern. The site is not located in an environmentally diverse region and the soils around the Parker Earthwork are mostly a heavy clay which was not generally preferred by prehistoric agriculturalists. Sturgeon and other river-spawning fish species would have been available nearby at the spawning beds around Stag Island in the St. Clair River, and thus, may have been the main subsistence focus at the site. Yet, this is only speculation. T. Lee could not adequately define site function based on the data he collected and, like Boyle before him, he felt that the Parker Earthwork may be an anomalous occupation, where site selection was influenced by any number of unknown factors creating a need for some secrecy or short-term protection. Whether or not this was the case, the lack of data from the site and the lack of information regarding other Wolf Phase occupations along the northern St. Clair River and the lower Lake Huron region precludes definitive interpretations.

Obviously the length of occupation represented at the site is unknown and placing it within a chronological framework can only be guessed at based on ceramic seriation. Generally, the lack of distinctive Springwells Phase ceramics, as well as the absence of later strap handled, shell-tempered vessel forms suggest a 15th century A.D. period of occupation. More specifically, some of the linear corded rims from Parker are similar to examples recovered from the Caron site, which is believed to be transitional between the Springwells and Wolf Phases. In addition, a small group of Iroquoian style ceramic rims from the site (T. Lee 1958:21) appear to be very similar to Pound Necked examples recovered from the early 15th century Iroquoian Savage site, an isolated, single longhouse camp located 60 kilometers southeast of Parker near Thamesville (Murphy 1988b). Conversely, approximately 25% of the Savage site assemblage is made up of Parker Festooned, punctated, linear corded, and plain vessels similar to examples from Parker. Four radio-carbon dates from Savage, as well as seriation with Iroquoian sites to the east, place the site occupation to between A.D. 1400 and 1450. Given this age estimate, we would argue for a similar date for Parker, and feel that the site was occupied by a single group of people who interacted on some level with Iroquoian groups to the southeast. This interpretation is contrary to the assertion of Stothers, Graves and Conway (1984:73), who argue that the Parker Earthwork reflects three periods of occupation: a Wolf Phase component, followed by two periods of Iroquoian habitation.

The most extensively excavated Wolf Phase site in southwestern Ontario is the Weiser site. This site exhibits a number of similarities to the Parker Earthwork, except that it is located much closer to a river, being at the northern edge of a wet prairie bordering Lake St. Clair. Weiser is believed to post-date Parker based on the presence of shell-tempered strap handled vessels, the appearance of more notched applique decorative techniques, a lesser frequency of Parker Festooned, and a complete absence of transitional Mixter-like ceramic types.

The Weiser site was the focus of University of Windsor field schools through the 1970's (Carey 1971; Kroon 1972a, 1974; P. Reid 1978a), although very little of the findings from this work is available in published format (Stothers, Graves and Conway 1984). The site is located immediately northeast of the Walpole Island delta, near where the Sydenham River meets the Chenal Ecarte (Figure 7.1), and adjacent to Running Creek. Located on a small rise of generally heavy loam to clay soils, Weiser is approximately 1.5 metres above surrounding water levels, and at times of high water the site can be inundated. At the time of occupation, Weiser was likely situated on the edge of an oak-hickory-white ash forest immediately north of the wet prairie which extended over much of the east side of Lake St. Clair (Findlay 1978a).

Although modern agriculture has leveled the site, 19th century accounts describe a horseshoe or semi-circular shaped earthwork enclosing an area of approximately 2 hectares (P. Reid 1978a:1). The earthring was reported to be about 1.5 metres high and opened northward, facing Running Creek. Low mounds were noted near the opening and across the creek, possibly representing entrance embankments or burial areas. The earthring and low mounds was confirmed through infra-red areal photography (Kroon 1972a; P. Reid 1978a). Excavations revealed the extent of agricultural destruction on the site, with only the bases of the deeper pit features remaining intact. Nonetheless, a large artifact sample, obtained mostly from midden deposits associated with an earthring trench, was recovered (Kroon 1972a, 1974; P. Reid 1978a). A row of post moulds was found in the bottom of the refuse-filled earthring trench, which apparently is closely allied to the location of an inner "enclosure wall" observed on the infra-red areal photograph of the site (Carey 1971; Kroon 1972a: Figure 2, 3). P. Reid's work in 1977, however, did not confirm the presence of an enclosure trench or post moulds in the eastern portion of the site (1978a: Figure 4). Within the enclosure, the noted features appear to be the still intact lower portions of sterile storage pits, and artifact rich refuse-filled pits (Carey 1971; Kroon 1972a; P. Reid 1978a). Not surprisingly, no interior structural data was obtained. Despite this, P. Reid reports recovering large quantities of daub fragments, particularly associated with the densest areas of surface collected material. These he interprets as being possible house locations (1978a:47).

Large quantities of faunal remains were recovered which were dominated equally by fish and mammals (P. Reid 1978a:40). Fish remains included freshwater drum, catfish, and bowfin (Kroon 1972a:7; P. Reid 1978a:40). Mammal species included deer, elk, muskrat, raccoon, bear, mink, fox and groundhog (P. Reid 1978a:40).

Based on recovered faunal remains and site location, P. Reid has suggested that Weiser was occupied primarily during the summer months. He further argued that the site represented a "macroband" community who seasonally coalesced in numbers upwards of 100 to 300 people, in order to take advantage of the fish resources in the adjacent lake and rivers (P. Reid 1978a: 47-49). This interpretation implies that the Weiser community moved elsewhere for the winter. It has been suggested that the people of Weiser were heavily involved in agriculture (Stothers, Graves and Conway 1984:73). However, with only 4 carbonized corn kernels reported from the site (Kroon 1972a:7), there is no basis at present, beyond speculative inference, to support such a claim.

A third Wolf Phase village community from southwestern Ontario is likely represented at the Libby site in Wallaceburg, a short distance upriver from Weiser (Figure 7.1). Libby would appear to represent one of the latest Wolf Phase occupations in the area of Lake St. Clair. The ceramic assemblage lacks Parker Festooned but has a large frequency of neck applique vessels, similar to those documented from the Liahn I site (I. Kenyon 1988). It is believed that Libby dates to the first half of the 16th century A.D., perhaps first occupied not long after the Weiser site was abandoned. Further confirmation of the temporal placement of this site is seen from the tightly dated, mid 16th century, Iroquoian Wolfe Creek site in southeast Chatham (Foster 1982a). The Wolfe Creek site ceramic assemblage included 36% Wolf Phase rims (Foster 1982a:77), the majority of which were neck applique types similar to the Libby assemblage. Likewise, collections of Libby site ceramics generally contained some frequencies of Iroquoian ceramic types similar to that documented at Wolfe Creek.

The Libby site is situated on the west side of the Sydenham River. The riverbank by the site rises about three metres above normal water level, and the surrounding soils are a mixture of outwash sands and clay. The original forest cover for the immediate area consisted of a large island of oak dominated forest, with marshland to the north and east, and large, wet prairies to the south and west (Finlay 1978a). Like the Weiser site, Libby is surrounded by river channels, marshes and open prairies, which would have offered a diverse number of flora and fauna to exploit.

In the mid 1960's, collections were made from the surface of the site by Leonard Kroon (personal communication) and Etienne Vantomme collected the remains of a midden or several refuse pit deposits which had eroded along the bank of the Sydenham River (Vantomme 1965). Since the area around these finds is currently heavily developed, the overall size of the site is difficult to establish. However, in 1985, sewer repairs in a residential area approximately 200 metres northwest of the riverbank impacted three pit features containing refuse and human remains (Ferris et al. 1990; Fox 1986f; Spence 1990). Faunal remains from pit fill suggested warm weather extraction, and were dominated by a large and diverse number of fish species, including walleye, bowfin, drum, bass and perch, along with several species of sucker and catfish. Mammal remains included deer, raccoon, domestic dog, muskrat and beaver, while avian remains included an unidentified species of duck, passenger pigeon, blue jay and red tailed hawk. Fragments of a river clam species were also present (Prevec 1989b). Ceramics recovered were shell-tempered, notched applique varieties identical to types recovered earlier by Vantomme and Kroon (Ferris et al. 1990). If this area is a continuation of Libby, it would imply that the site area covered several acres. However, as so little is known about the size, seasonality and community patterns of the Libby site, few interpretations regarding the significance of the site can be offered. Presently, Libby-Miller fills a temporal and spatial gap in the archaeological record of the Wolf Phase in southwestern Ontario. In addition, the site may represent a large community that was situated in a setting quite similar to the previously occupied Weiser site, suggesting that similar settlement-subsistence patterns continued into the 16th century. Alternatively, Libby may reflect temporal changes to Wolf Phase settlement-subsistence strategies during the last part of the prehistoric period, perhaps shifting towards a pattern of more substantial, fortified and permanent village occupations, similar to that seen in northwestern Ohio during this period. At present, no firm evidence can be used to support either hypothesis.

In addition to the large site communities documented for the Wolf Phase, another form of occupation during this period appears to be represented at the Liahn I site (I. Kenyon 1988). Here, Wolf Phase settlement remains consisted of pit features superimposed on the earlier Springwells Phase component. Ceramics associated with this occupation are similar to those documented from the Libby-Miller site, and a radio-carbon date confirms an early to mid-16th century A.D. placement for the component (see Table 7.2). Subsistence remains from Wolf Phase features at Liahn I are similar to that documented for the Springwells Phase component on the site, suggesting a contin-

uation of summer exploitation of the shallow waters and adjacent shore of Lake St. Clair (I. Kenyon 1988:21). It would appear that the Wolf Phase occupation at Liahn I represents a summer fishing camp, likely associated with a base settlement nearby, such as Libby-Miller or some other location. Additional short-term occupations have been documented on Walpole Island (N. Adams 1987, 1989). These sites tend to be located on sand ridges along marsh borders and deltaic channels which again are likely seasonal encampments associated with larger village communities.

Following the last part of the Wolf Phase, Native peoples seem to have largely abandoned the region which was once the territory of the Ontario Western Basin Tradition peoples. The reasons for this abandonment likely are related to the long accumulation of prehistoric trends in the region, characterized by increasing tension between Western Basin and Ontario Iroquoian groups. Indeed, documented conflicts during the historic period between Neutral Iroquoians and groups west of Lake Erie are most likely reporting on the continuation of these hostilities from prehistoric times (see Heidenreich, Lennox and Fitzgerald: this volume). During the historic period, most of Ontario beyond the Grand River is believed to have been an empty area, utilized by Neutral hunting parties (Lennox 1987a), as suggested by the discovery of occasional French trade axes in areas as far west as central Kent County (e.g. Ferris 1986). At the far southwestern end of Lake Erie near Toledo, Ohio, a large, fortified village has been documented (Graves 1984; Stothers 1981). The Indian Hills site has yielded historic trade goods, including beads dating to Glass Trade Bead Period 2 (ca. A.D. 1600-1620; see I. Kenyon and Kenyon 1982; I. Kenyon and Fitzgerald 1987). Indian Hills is believed to represent one of the last, if not *the* very last Central Algonquian settlement around the western end of Lake Erie prior to substantial Neutral raids in the late 1630's and early 1640's, which displaced local Central Algonquian groups in the region (Graves 1984; Stothers 1981; see also Heidenreich: this volume).

Following these events, southwestern Ontario appears to have been visited only infrequently by Native groups, and was largely empty of permanent settlement during the remainder of the 17th century (see Lajeunesse 1960). After the French establishment of Fort Pontchartrain in 1701 in present-day Detroit, Native groups moved back into the area, with much of the St. Clair Waterway and interior drainages of the Sydenham and Thames eventually re-settled by Ojibwa groups originally from the north shore of Lakes Huron and Superior (Ferris 1989a; Rogers 1978).

Wolf Phase Settlement-Subsistence Summary

Trends towards population aggregation and territorial retraction which began during the Springwells Phase appear to have accelerated during the Wolf Phase. Data suggest that a few, larger and fortified communities supported by seasonal camps became the predominant settlement pattern during this period. The few larger sites documented appear to represent sequential village movements, although this may simply reflect the limited site locations identified so far. Still, the presence of a single large settlement for each of the fifty year increments covering the Wolf Phase does seem to indicate that the dispersed settlement-subsistence strategies practiced since the Riviere au Vase Phase had been abandoned in favour of large population aggregations oriented around perhaps a single regional village community. This interpretation may also, in part, explain the paucity of documented Wolf Phase sites in southwestern Ontario. In addition, the limited distribution of these settlements along the St. Clair waterway and the Iroquoian presence as far as Chatham suggest that the majority of Wolf Phase occupations are to be found in Michigan, with the St. Clair sites representing perhaps the easternmost extent of this group. In fact, a relatively large number of Wolf Phase earthworked sites have been documented along Lake Huron and the St. Clair River, and at the interface between the upland moraines and the lake plain of southeastern Michigan (Greenman 1939; Zurel 1985). The appearance of earthwork enclosures is also likely related to increasing population aggregations in larger village communities and correlates with the shift westwards in occupied territory. The fact that much of the region formerly occupied by the Western Basin Tradition in Ontario became inhabited by a western branch of the Ontario Iroquoians after about A.D. 1400, may well point to the reason behind increased population aggregations and village fortifications among Wolf Phase communities of this period. Unfortunately, the relationship between these two groups is at present poorly understood, though it is assumed to have been based more on conflict than peaceful exchange, as suggested by historically recorded incidents between the Neutral and Algonquian-speaking groups west of Lake Erie.

Our ability to appreciate the political developments that occurred during the Wolf Phase is hampered by a lack of data which can adequately document settlement-subsistence patterns from either the Parker Earthwork, Weiser or Libby sites. At best, we can offer some speculations based on the locational information for these sites. All are situated in similar locations. These locations are generally unsuitable for agriculture of any substantial amount, but relatively well-situated to exploit a number of resources, particularly fish, although the inland, "hidden" location of the Parker Earthwork remains an enigma. If one assumes that these sites were year-round, agricultural occupations, one could argue that crops were grown away from the settlements. Certainly the Parker Earthwork is only a few kilometers south of the Sarnia Sand Plain, while inhabitants at the Weiser site could have grown crops on the prairie lands of adjacent St. Anne's Island, and the Libby inhabitants could have utilized the Dover or Chatham flats to the south. These areas all could have supported crops. However, this interpretation ignores other factors which may have determined site location, and relies too heavily on drawing comparisons with contemporaneous Iroquoian settlement-subsistence practices. Each of the Wolf Phase villages had relatively easy access to rivers and lake locales to take advantage of fish, and the little information on faunal data for each of these sites do emphasize the abundance of fish remains within collections. As well, why situate sites in places such as Weiser -- on low sand ridges susceptible to flooding -- if the main subsistence strategy of the site's inhabitants was the raising of crops on nearby St. Anne's Island? Surely locating the occupation on St. Anne's would have been the preference if agriculture was the primary focus of these people.

If a year round agricultural occupation does not fit these three Wolf Phase sites, then perhaps the historically documented Central Algonquian settlement-subsistence strategy of dual settlements might better fit the information at hand. This information would suggest that a major movement of peoples occurred during the year, perhaps associated with seasonal change. It may be that at warm weather occupied villages such as Parker, Weiser and Libby, groups exploited all available resources, both from the village location itself, and from more special purpose camps such as at Liahn I. At the end of the warm weather, it may be that these groups moved to winter village settlements, perhaps situated in Michigan in areas where game was plentiful. In general, this pattern would reflect a continuation and further development of trends seen during the earlier Western Basin Tradition. However, this all must remain speculation until much more meaningful settlement-subsistence data can be obtained from Wolf Phase Basin villages, if such a thing is still possible.

General Trends in Western Basin Settlement-Subsistence

While summaries have been provided for each phase of the Western Basin Tradition, it is still necessary to place these settlement-subsistence patterns into the broader context of general cultural development and change through the Late Woodland.

The Riviere au Vase Phase exhibits a settlement-subsistence strategy quite similar to the Middle Woodland, although whether this observation is due to the weak data base for both the Riviere au Vase Phase and the Middle Woodland Couture Complex, or is due to a real continuity, is unknown. Emphasis during the Riviere au Vase Phase was on seasonally abundant resources, and a fair degree of mobility may have been required to move from one resource extraction locality to another. Exploitation of Point Pelee and Point Aux Pins suggest that during the warmer months the primary focus was on these resource rich environmental zones. Evidence of midden-like deposits at 11H8 and Indian Clearing may point to intensive use of these sites during the warm weather months. Interior sites along the Thames River suggest that cold weather deer hunting, as well as possibly nut procurement, were important activities but it is not clear if the people using these sites also encamped during the summer at lakefront locales, or if they maintained a separate, interior, riverine-based strategy different from groups along the Lake Erie shore.

It is assumed that the basic unit for Riviere au Vase Phase people, as a typical hunting and gathering society, was the single, loosely structured, extended family which probably gathered together with other such groups at warm weather sites such as those on Point Pelee, and perhaps also during short, intensive periods of resource procurement, such as during spring fish spawning runs. This apparent "fixation" with critical resource areas and the apparent tendency to return to them on a regular basis, may explain why there is a dearth of Riviere au Vase Phase

sites documented. As well, the emphasis on key resource locales, also favoured before and after this phase, may explain why sites tend to be multi-component and why settlement data is not yet available for this period.

Defining the end of the Riviere au Vase Phase and the start of the Younge Phase is difficult, with perhaps only subtle shifts in settlement-subsistence behaviour occurring during this transition. In general, Younge Phase subsistence patterns show a continued evolution of trends visible earlier. The overall pattern during the Younge Phase was one of exploitation of seasonally abundant resources, following a rather informal seasonal round. Emphasis continued to be on hunting, fishing and gathering, with sites situated to take advantage of whatever resources were available during a specific time of the year. Thus, subsistence strategies at such locales involved diffuse patterns of exploitation, taking advantage of a number of resources. In addition, sites like Van Bemmel reflect specific resource procurement camps, where activity was focused, intensive and short term. Younge Phase occupations on Point Pelee may have functioned similarly. While sites like Dymock and Krieger suggest that growing maize was part of the warm weather strategy during the Younge Phase, the relatively small quantities of cultigens from these sites, and the continuity from Riviere au Vase patterns of subsistence indicate that cultigens remained a largely supplementary source of food. Indeed, agriculture was probably limited to garden plots adjacent to warm season camps. While it appears that cultigens were first introduced during the Younge Phase, it also appears that these people did not experience the radical changes in life that cultigens brought to contemporaneous Early Ontario Iroquoian peoples to the east.

Compared to the Riviere au Vase Phase, there appears to be a wealth of settlement information available for the Younge Phase due to the relatively large number of identified and investigated sites. This may be due in part to an increase in the number of Younge Phase sites in the region. If there was an increase in the number of sites occupied in the phase, there are several possible explanations. It could be argued, for instance, that a substantial population increase occurred during the phase, necessitating group fragmentation and movement onto previously unoccupied or little used parts of the region. This explanation could account for a shift away from lake points, which could not support larger population aggregates. Communities using particular drainages may have consisted of loosely organized family groups, who maintained informal, seasonally specific camp sites along these drainages and based their seasonal round on relatively small territories -- an option available due to the abundance and diversity of resources in these areas (although variation may have occurred between lakeshores and river drainages). Such a pattern could well have been a result of increased population pressure on Younge Phase peoples. Thus, an expansion into previously vacant areas, accompanied by the use of several sites during a given seasonal round could generate, over three or four hundred years, a substantial number of habitation locales and sites. No doubt a number of factors were responsible for an increase in the number of Younge Phase sites, but determining the impact of each is beyond the scope of the available data.

Shifts in settlement and subsistence are seen in the succeeding Springwells Phase but these changes tend to reflect a continuing evolution of patterns observed in the earlier phases. For example, warm weather villages do become more substantial and formal during the Springwells Phase but these summer "villages" are still located in areas which provided access to a wide range of small ecological niches, thus providing these peoples with the same diverse resources as were exploited by their predecessors. In other words, the diversity of subsistence strategies was maintained at these new locations but proximity to such resources is minimized to within a day's walk of the settlement. This emphasis on larger settlements near environmentally diverse areas is believed to be primarily a result of increased emphasis on cultigens during the phase. Such locations provided suitable plots of land for planting while access was maintained to areas where more "traditional" forms of subsistence could be practiced.

The shift in locational preference likely explains the movement onto the low-lying Dover plain on the eastern side of Lake St. Clair during the Springwells Phase. At the same time, there is a decline in Springwells Phase occupations along the Thames River east of Thamesville, although winter habitations continued in that area. It may be that this Thames River group moved to the Dover plain as a response to shifting locational needs for warm weather settlements. Alternatively, this movement may have been due to increasing competition from an encroaching branch of the Ontario Iroquois. The Iroquois appear to move east into Western Basin territory during the thirteenth century. However, substantial occupations by Iroquoians onto the western half of the Bothwell Sand Plain do

not appear until the end of the Springwells Phase. This reduction in territorial extent during the Springwells Phase raises a number of questions regarding Western Basin - Iroquoian interaction. The available evidence points as much towards avoidance or limited interaction as it does to raiding or warfare. As Springwells groups increased their emphasis on agriculture, far-ranging subsistence practices were likely reduced and Iroquoian groups may have gradually incorporated abandoned territory, particularly along the Thames River, that was then less frequently used by Western Basin peoples. The construction of earthwork enclosures by the time of the Springwells-Wolf transition and the further reduction in territory occupied by Western Basin peoples in southwestern Ontario, as well as the appearance of more substantial and possibly fortified Iroquoian villages as far west as Chatham during the Wolf Phase, may suggest that greater tensions over territoriality had arisen, leading perhaps to increasing conflicts.

Western Basin settlement data is most complete for the Springwells Phase, with two complete house structures and a possible partial village being documented. The Liahn I longhouse may have housed one or more families and was likely typical of warm weather houses at that time while several straight-walled structures surrounded by a palisade at LaSalle-Lucier suggest a relatively substantial example of a summer settlement. Lastly, the Sherman site illustrates a good example of a cold season occupation by a single family.

The settlement-subsistence strategy of the final prehistoric period remains the least understood due to a general lack of information. The two, and possibly three, large Wolf Phase sites known for the region appear to represent successive segments of Wolf Phase culture history. It is impossible to say much about these sites, however, when so many variables related to the establishment and function of these settlements are unknown. For example, the location of all three sites argue against the intensive growing of cultigens in the sites' vicinities. Perhaps such sites were occupied year-round and that crops were raised at garden plots tended by family groups away from the main settlement in areas more suitable for agriculture. Alternatively, one could draw an analogy with historic Central Algonquian groups which suggests the large Wolf Phase sites could be either summer or winter villages. This possibility could imply that Wolf Phase peoples had forsaken the pattern of winter dispersal into small groups in favour of maintaining larger settlements which were removed from warm weather village locations. Lastly, one could argue that Weiser, Parker and perhaps Libby, all represent frontier forts (unrelated to a specific seasonal subsistence pattern), intermittently occupied regardless of season in response to perceived or real threats from Iroquoian communities to the southeast.

Each of the above scenarios are reasonable enough speculations given the available data, although we doubt that all reflect the actual reality. At present, we favour the interpretation that these Wolf Phase sites were villages occupied seasonally. Yet, how these sites fit within an overall seasonal round for the Wolf Phase is unknown. In any case, it does appear that these sites were part of a community pattern which was primarily situated in Michigan to the west and north of Lake St. Clair. Unfortunately, clarifications of the numerous questions one can raise about Wolf Phase settlement-subsistence is a long way off and will require careful examination of sites discovered in the future designed to recover what so far has proved to be elusive data.

Mortuary Patterns of the Western Basin Tradition

Very little information is available from southwestern Ontario on the burial practices of the Late Woodland Western Basin peoples. At best, we can only provide here a discussion of the little data available on these burial practices, defining where possible temporally sensitive characteristics specific to one or the other of the four phases described above. We will also, when possible, augment the data with information from Ohio and Michigan.

The burial practices for the beginning of the Late Woodland in southwestern Ontario are almost completely unknown, but they are assumed to parallel those known from this period in southeast Michigan and northwest Ohio as described by Halsey (1976). Only the Williams site in southwestern Ontario has provided information on the mortuary practices of the late Middle Woodland and early Late Woodland period. In 1949, Stan Wortner and Neil Coppeiters found that sand mining was destroying a low ridge just south of the Thames River in central Kent County. Salvage operations at the Williams site were limited to documenting the skeletal remains and associated mortu-

ary goods from two burials. All associated artifacts were found with a red ochre covered adult and consisted of two unilateral barbed antler harpoons, a double pointed copper awl, a straight based stone platform pipe, approximately 700 Anculosa shell beads, three corner notched points, three preforms, a drill, endscraper, adze, and two trianguloid knives (see W. Ritchie 1965:234-235, Plate 79). Ceramic vessels which would have more accurately placed the burials within the late Middle or early Late Woodland temporal frame were lacking, but similar artifact types have been recovered at 11H8 on Point Pelee. Here, barbed harpoon fragments, columella beads and Native copper were found in direct association with Wayne ware vessels, presumably of the early Late Woodland period (Keenlyside 1977:274).

Further west, several sites in southeastern Michigan have been documented with artifact assemblages similar to those recovered from the Williams site (Halsey 1968, 1976). These sites extend along the St. Clair River and Lake St. Clair, and south to the Detroit River and the western corner of Lake Erie. Several include burial mounds, although these mounds all have been destroyed by 20th century development (Halsey 1976). The mounds from around the Detroit area are known collectively as the Springwells Mound Group (Halsey 1968), and included the Fort Wayne, Carsten, Springwells and Great Mound sites. Most of these sites are known from recorded 19th century descriptions (Halsey 1976:446-459). Fortunately, the Fort Wayne mound received some formal investigation prior to its destruction in the 1940's (Halsey 1976:450-456; Howard 1950; Wilkinson 1968). At that time, 24 burials were uncovered (Holmquist 1946), consisting of 11 females, 7 males, and 6 of indeterminate sex. A further 18 burials were apparently uncovered in the 19th century (Halsey 1976:455). Halsey also reports that artifact yields were rather sparse at this site, and that burial inclusions most commonly consisted of a single pot (1976:450). Ceramics were Wayne Ware types, and diagnostic points included seven Jack's Reef corner-notched specimens. Drills, chipped slate disks and caches of lithic flakes were also recovered, as well as a reported find of large columella beads and a curved bone ornament (Halsey 1976: 450-454). A single radiocarbon date (uncalibrated) of A.D. 750 ± 120 (M-1843) was obtained from the site, taken from a femur recovered in a burial pit (Halsey 1976:456). This date tentatively suggests a mid to late Riviere au Vase Phase period of use, which may explain the relative dearth of elaborate grave offerings.

Other burial sites of the early Late Woodland period, not associated with mounds, have been identified in Michigan. These include the Gibralter site, located at the mouth of the Detroit River on Lake Erie (Fitting 1965; Greenman 1945; Halsey 1976), the Bussinger and Bugai sites near Saginaw Bay (Halsey 1976), and the Riviere au Vase site on the northwestern shore of Lake St. Clair (Fitting 1965; Greenman 1957; Halsey 1976; Krakker 1983). At Riviere au Vase, 144 pit features and 145 burial groupings, comprising at least 350 individuals, were documented (Fitting 1965:8). Yet, since only a portion of the site was excavated, it has been estimated that as many as 2000 burials may once have been present at the site (Fitting and Zurel 1976:228). Burial pits at Riviere au Vase were oblong to almost rectangular, with circular burial features being the least common (Krakker 1983:513). Five forms of mortuary treatment were observed, including extended, bundle, flexed and head and torso interments. Extended burials were the most common (Krakker 1983:508). The presence of numerous refuse features suggests the Riviere au Vase site did provide a place for people to conduct day-to-day activities. It is not clear however if these people travelled some distance to come to this locale specifically to bury their dead, or if the site simply represents the results of a long-term seasonal occupation of the area.

Unfortunately, as is very often the case at Western Basin Tradition burial localities, material recovered from the Riviere au Vase site represented much of the Late Woodland sequence. However, a series of eight early burial pits were identified, due primarily to the wealth of grave accompaniments in these features (Fitting 1965:92; Krakker 1983:492). These burials included Wayne ware vessels and other elements of the Riviere au Vase Phase material culture, although the number of finished slate artifacts, such as crescents, knives and points, was unusually high (Halsey 1976:448). According to Fitting, these burials consisted primarily of flexed, single interments, although two bundle burials, an extended burial, and a burial consisting of partial elements were also documented (1965:76-81). Four of the interments were of single individuals, three were of two individuals, and one contained the remains of three bodies.

Halsey has stated that these early Late Woodland burial sites in Michigan reflect a common body of mortuary behaviour which extended in various forms throughout much of the Great Lakes drainage basin (1976:650). He also noted that this mortuary complex has close associations with the Intrusive Mound Culture of Ohio (Mills 1922), as well as with the Walkerton and Albee Phases of Indiana, and with the Kipp Island Phase of New York (1976:554-582). In Michigan, this complex is associated with burials which include a wide range of utilitarian and exotic grave goods made from copper and mica, as well as ground stone celts, slate pendants, corner-notched points, large ceremonial bifaces (usually made of Upper Mercer chert), marine shell beads, unilaterally barbed harpoons, stone picks, straight based stone platform pipes and Wayne ware vessels (Halsey 1976).

While a relatively moot point in light of the sparse database, it is worth noting that some researchers have chosen to classify this mortuary complex as part of the late Middle Woodland (e.g. see Fox, previous chapter). For example, W. Ritchie has recognized the close similarities of the Williams site burials to his late Middle Woodland Kipp Island phase of upper New York (beginning at about A.D. 500), based on shared cultural traits such as the barbed antler artifacts and projectile point types (1965). As well, R. Mason (1981:296) has argued that the end of the Middle Woodland can be tied to a decline in the lavish mortuary accompaniments (ca. A.D. 700-750) that are found at sites such as Williams. In many ways, the current variable interpretations on the exact end of the Middle Woodland and beginning of the Late Woodland are irrelevant. The lack of a substantial database over wide geographic areas, as well as the lack of clear associations between habitation and mortuary sites, including the lack of the exotic grave goods on habitation sites, precludes any definitive answers. Also, in light of the difficulties in marking the beginning of the Late Woodland based on material culture or subsistence patterns, as discussed earlier, it is perhaps impossible to place an arbitrary date within a slow-developing cultural continuum. For the present, we choose to support the end of the Middle Woodland as occurring somewhere between A.D. 500 and 600, albeit based on a relatively weak database drawn from ceramic assemblages recovered from primarily habitation sites (see also Fox: previous chapter; Spence et al.: this volume for alternative views). Clearly, much more work is required to clarify this issue.

Further information on mortuary patterns for the Western Basin Tradition comes from Gard Island in Michigan, and Krieger and Dymock along the Thames River in southwestern Ontario. Gard Island, located in the extreme southeastern corner of Michigan in Maumee Bay (Figure 7.1), was the subject of limited excavations during the 1970's (Lozanoff and Stothers 1975; Stothers et al. 1978). Material culture and radiocarbon dates suggest a period of occupation in the eighth or ninth century A.D. (Lozanoff and Stothers 1975:2-3). A total of 18 burial features yielded the remains of 47 individuals, of which the majority were adult (64%), followed by young adult (15%), child (17%) and infant (4%). Sex could be identified for less than half of the individuals represented (47.8%), of which 30.4% were male and 17.4% were female (Stothers et al. 1978:16). The most common form of interment was extended (43%), followed by bundle (21%), flexed (7%) and cremation (3%). A further 25% of the burials were only partial interments. Burial features most commonly contained single individuals (44%) although pits with two individuals were also common (28%), and a feature consisting of one extended and two bundle burials contained the remains of upwards of 11 individuals was documented (Lozanoff and Stothers 1975:11-14). At least four burials contained additional skulls, and post-mortem alterations such as drill holes in skulls and skull disks removed were observed in the sample. Grave goods were infrequent, with only one burial feature yielding a vessel. The Gard Island cemetery is similar to Riviere au Vase, in that habitation features and refuse are associated in the same area as the burials. The suggestion offered for Gard Island is that it was reused on a number of occasions, serving both as a seasonal fishing station and as a cemetery locale (Lozanoff and Stothers 1975:3; Stothers et al. 1978:6).

At the Krieger site in southwestern Ontario, the most significant burial found during excavations was an oval feature measuring 2.5 by 1.75 metres, containing the remains of eight individuals. These individuals included three adult females, one adult male, one child and two infants (Kidd 1954, 1956). Orientation of the remains consisted of the skulls placed so as to ring the edge of the pit, with articulated and disarticulated post-cranial elements apparently placed haphazardly within the ring of skulls (Kidd 1954:171, 1956:26). Many of the individuals were partially articulated, from the skull to the pelvis, while the lower extremities were scattered throughout the feature. Other burials from Krieger include three or possibly four badly disturbed interments in a refuse pit. Also, two tibiae from an adult male, deliberately placed crossways from each other, were found in a refuse pit (Kidd 1954:170). As well, 33 addi-

tional pieces of human bone were found scattered across the site. At the time of the investigation the site had suffered extensive erosional disturbance and much of this loose bone may have derived from disturbed burials. Relative to other Western Basin Tradition sites in southwestern Ontario, the frequency of remains from the portion of Krieger excavated seems unusually high, but the implications of this are not clear.

At the Younge Phase Dymock site four burial features were documented, each of which contained the remains of small body elements. It has been suggested that the larger skeletal elements were missing from these features due to the fact they were removed from the pits, perhaps for bundling or some other form of secondary interment (Fox 1982a). Indeed, Fox has argued that the burials at Dymock had been removed for interment elsewhere, perhaps at a site like Krieger, where dis-interred remains could have been placed in multiple burial features comparable to those documented at Krieger (Fox 1982a). Multiple graves such as those at Krieger may reflect the early appearance in the Western Basin Late Woodland of a communal mortuary event, where primary burials from other locations were re-interred at an appropriate locale and appropriate time. Again, only further information, documenting mortuary patterns for specific phases of the Western Basin Tradition, can confirm or refute these suggestions.

While sites like Riviere au Vase, Gard Island and Krieger, as well as the "missing" evidence from Dymock, suggest that some locales were used as group burying places during the middle period of the Western Basin Tradition, isolated or individual interments are known from a number of sites occupied between the Riviere au Vase to Springwells Phase period. For example, at the Robson Road site, four burials were encountered among the 145 pits excavated in 1987 (I. Kenyon and Ferris 1988). While all were in a poor state of preservation, enough data was recovered to indicate that, with the exception of one too damaged to interpret, a wide range of interment practices had been used. One feature contained the remains of three, fully extended and likely articulated individuals. Two were oriented with their heads to the south, while the third was oriented to the north. All three individuals were interred one at a time, slightly overlapping the previous individual. Similar interments were also observed at the Younge site (Greenman 1937). A second feature at Robson Road contained bundle burials of two children and a young adult female. Only the skull, upper extremities and portions of the torso of all three individuals were present. Finally, a single, articulated, adult female was recovered in a semi-flexed position, with the head towards the south, and facing west. With the exception of a bone awl found with the latter burial, none of these interments contained any artifacts.

While determining the specific period of interment for the burials at Robson Road is impossible, it does appear that isolated burials were common on sites through to the end of the Springwells Phase, and likely longer. Scattered skeletal material, as well as single and multiple burials, have been located at Laramie (Bond 1966), Dick (P. Reid 1983a), AaHp-23, Lasalle-Lucier (Lennox et al. 1989), Turkey Creek (Fitting and Zurel 1976), Rickley (Williamson 1980a), Caron (Knight and Ramsden n.d.), Bellamy (Ferris 1987a; Murphy 1987), Stag Island (Spence 1981) and Macklin (Fox n.d.a). In addition, reports of human remains from dozens of localities in southwestern-most Ontario, associated with Late Woodland materials (D. Carey, S. Wortner, D. Crundwell: personal communications), suggests that incidental interments were common. That many of these sites are either Younge or Springwells Phase occupations, suggest that this form of individual burial was most commonly practiced during the middle period of the Western Basin Tradition, although poor data from the Riviere au Vase and Wolf Phases may explain the lack of data for those periods.

Incidental burials tend to appear at warm weather occupations. While this again may be due to the fact that few cold weather sites have yet been documented, the lack of burials from Van Bemmel, Sherman and most notably Bruner-Colasanti, where over 300 features were excavated is suggestive. If burials occur primarily at warm weather sites in a number of interment and re-interment modes, it may be that individuals who died during winter months were "curated" until a more appropriate time and/or place for final burial was reached. This interpretation is consistent with the evidence from Riviere au Vase, Dymock and Krieger, which suggest that dis-interment and reburial elsewhere, perhaps at sites which at least in part functioned as cemeteries or "places set apart", was a common element of Western Basin mortuary patterns during part or all of the Late Woodland period.

Another characteristic of Western Basin burial practices, apparently a feature most common during the Younge and Springwells Phases, is the appearance of post-mortem alteration to skeletons (B. Redmond 1982). Riviere au Vase and Younge in Michigan, and Lucier, Stag Island and Laramie in Ontario have revealed burials with post-mortem alterations such as cut and drilled longbones, drilled skulls, sometimes with discs removed, and clay packed into cranial cavities (Bond 1966; Fitting 1965:82, 130-131; Krakker 1983:483; Lozanoff and Stothers 1975; B. Redmond 1982; Spence 1981). Also, evidence of possible ritual ablation has been documented from Stag Island and Lucier, where the central incisors appeared to have been forcibly removed from several females, suggesting a ceremonial, social or cosmetic practice used by some Western Basin women (Lennox n.d.b; Spence 1981). Finally, sites such as Main, Turkey Creek and Lasalle-Lucier have yielded examples of partial or complete cremation, perhaps associated with infant and adult female interments (Fitting and Zurel 1976; Lennox et al. 1989; P. Wright 1977).

The evidence from sites such as Riviere au Vase, Gard Island and Krieger is likely an expression of mortuary behaviour also manifested at the Younge, Lucier, Libben and Eiden sites, which document a fairly complex interment process centered around the ritual reburial of individuals at special places. It may be that this practice of ceremonial re-interment represents the development of a community-wide, or even regionally-wide cultural event, which served to reinforce the social and familiar ties between the living participants, as much as they served the final act of devotion to the deceased (Krakker 1983:490).

Lucier is characterized by a number of longhouse-like structures lacking functional features (Figure 7.33), but likely associated with a number of single and multiple burial pits (Lennox n.d.b; Wintemberg 1936b; P. Wright 1976). These houses were at least 25 metres long by 8 meters wide, and were oriented east-west. During the 1984 excavations a series of 6 burial features were identified in the area of densest wall overlap (Lennox n.d.b), and adjacent to trenches excavated in the 1930's by Wintemberg, who recovered at least 25 individuals from 19 burial features. The Wintemberg interments included 11 (38%) flexed burials; 7 (24%) bundle burials; 6 (21%) torso burials; and 5 (17%) fragmentary and cremated burials (P. Wright 1976:10-11). Five skulls exhibited perforations, as did a humerus and femur from a bundle burial (B. Redmond 1982:14; P. Wright 1976:11).

The most significant mortuary site documented for the Western Basin Tradition remains the Younge site (Greenman 1937). Located inland away from any major water courses to the south and east of Saginaw Bay in Michigan (Figure 7.1), excavations revealed complete and partial house structures measuring hundreds of feet in length. Evidence was also recovered to suggest that these structures underwent periods of rebuilding, indicating that the structures, as well as the site, were reused on several occasions. Unlike Lucier, these houses had numerous hearths and refuse pits, which may reflect some sort of habitation activity, perhaps related to the mortuary activities conducted at the site (Fitting 1970:156; Greenman 1937). Despite the presence of refuse pits on the site, artifact yields were sparse (Greenman 1937). In all, only 31 ceramic vessels were identified in the collection (Fitting 1965). Fitting has placed the Younge site into the Younge Phase of the Western Basin Tradition (Fitting 1965, 1970: 156), although the presence of significant numbers of Springwells Phase ceramics suggest a later date, or at least a much longer period of use than suggested previously. Perhaps the site was visited irregularly over the course of a century or more, between the end of the Younge Phase and well into the Springwells Phase.

House Enclosure 1 was reported to be over 178 metres long and over 9 metres wide, oriented east-west and in outline appears to have been an extremely long, longhouse-like structure (Greenman 1937:9). The walls of the structure consisted of a "band" or cluster of hundreds of post moulds, measuring 1.8 metres wide, and this unusual definition of the house wall may reflect continued re-use and reconstruction of the structure, or portions of it, over a long period of time, with some care made to ensure that the posts were always placed back in the narrow wall trench. Likewise, features within the structure were oriented along its long axis and were concentrated towards the center of the enclosure. It may well be that the extreme length of the structure was due to several successive periods of rebuilding, while keeping orientation so exact that the central area of features remained relatively stable.

A total of 57 burial features, representing 82 or more individuals, were documented near the center of this structure (Greenman 1937:7). Burials at the site are represented by primary and secondary extended, flexed, bundle,

cremated, and dismembered body parts and isolated skull interments (Greenman 1937:55). Bundle burials were the most common form of individual interment (47.8%), followed by secondary and primary extended (28.9%), torso interments (10.1%), flexed and isolated skull interments (5.7% each), and finally cremation (1.4%). An additional 19 individuals were classified as miscellaneous, primarily due to feature disturbance (Greenman 1937:57). Post-mortem alterations included perforated crania and long bones, as well as other instances of bone perforation, cutting and grooving (Greenman 1937:57). Several skulls showed the removal of circular disks of bone from the back of the crania. Six skulls showed evidence of clay packed into facial cavities, all of which had been perforated, and four of the six had disks at the posterior of the skull removed (Greenman 1937:57). Three cranial disks were found included in burials, one with an isolated torso, and two with bundles. None of these disks could be matched to a cranial hole within the skull collection from the site (Greenman 1937:58). With the exception of these disks and a single clay pipe, no grave goods were recovered from any of the burials.

The second enclosure was located 122 metres to the south of the first, was also oriented east-west and in outline was also longhouse shaped, measuring 76.5 metres long. Post patterns strongly suggest that this enclosure actually consisted of upwards of three interconnected structures, two connected nearly end to end, and a third superimposed on the eastern half of the enclosure (Greenman 1937:Map 5). The frequency of features and occupational debris was much lower in this enclosure than in the first, prompting Greenman to suggest that it was less intensively occupied or re-utilized (1937:22). House walls consisted of single rows of post moulds suggesting little in the way of rebuilding. While hearths and pits were also present in this enclosure, what is most significant is the complete absence of burials. As well, the limited number and small size of the ceramic assemblage from this area (three rims and one body sherd; Greenman 1937:72) raises the question of the function of Enclosure 2. While likely related to activities conducted at Enclosure 1, suggestions that Enclosure 2 provided a resting place for the living participants during the course of the mortuary ceremonies conducted in Enclosure 1 remain speculation at present.

Finally, a much smaller structure was documented during the excavations, located 64 metres to the east of Enclosure 1. This structure had an oval outline, defined by a single row of post moulds, and measured 12.2 by 7.6 metres (Greenman 1937:90). Apparently no internal features were recorded for this structure. While Greenman believed it served a function related to activities conducted in Enclosure 1, no further information was provided (1937:90-91).

Even more extensive that the Younge site, the Libben site in northwestern Ohio is reported to have yielded over 1500 individuals (Prufer and Shane 1976:295; D. Brose: personal communication). Unfortunately, very little published information is available on the site, and the massive osteological research done on this population (Romain 1979) could not be accessed for this study. Libben is located on the Portage River, immediately west of Sandusky Bay (Figure 7.1). Material culture and radiocarbon dates from the site suggest a number of occupations but its main period of use is believed to range from the late 700's to the end of the eleventh century A.D. While Prufer and Shane had suggested that the site was first a village and then was subsequently obliterated by the use of the locale as a cemetery (1976:295), later researchers have rejected that notion (Bowen 1990; D. Brose: personal communication). The lack of excavation maps from the site prohibits our supporting or rejecting of either hypothesis.

Burial information from Libben is limited, but bundle burials are reportedly the most common (200+ examples), and flexed, extended and cremation burials were also found (Prufer and Shane 1976:295). Most burials consisted of single individuals, with double and multiple interments in a single pit being much less frequent (D. Brose: personal communication). Sex and age information is not available although Prufer and Shane (1976:296) suggest that infants and children represent a significant portion of the population. Post-mortem alterations are relatively common with 15-20% of the burials exhibiting drilled long bones, drilled skulls, or skulls with disks removed (D. Brose: personal communication). At least 20 burials had an extra skull included as part of the interment. Grave offerings were noted, and ranged from shell pendants and beads to ceramic pipes and vessels (Prufer and Shane 1976:296). Brose indicates that over 100 interments included a pot, usually placed by the head or shoulder, and that over 250 vessels were recovered from the site. Prufer and Shane (1976:298) report finding very large quantities of fish at Libben. Species included catfish, walleye, suckers, drum and gar. The more limited frequencies of mammals

included mostly raccoon and deer. Brose suggests that, in light of the large number of interments present at Libben, this site was a regional mortuary centre for a large number of geographically dispersed communities. He adds that the site may have been visited in the spring so that the mortuary activities could be conducted during a spring harvesting of fish in the river. This interpretation is consistent with those from Gard Island, and perhaps even Riviere au Vase.

Further to the east in Ohio, along the Black River, is the Eiden site (McKenzie and Blank 1976; Scarry 1973; Figure 7.1). Once again, information for this site is limited. As with most of the major mortuary sites discussed do far, Eiden includes a number of components but the material culture and radiocarbon dates recovered suggest the period of most intensive occupation was from the 13th through to the 15th centuries A.D. Also, as with the other mortuary sites, some form of habitation component is associated with the cemetery at this location, with refuse pits, hearths, posts and occupational debris reported (McKenzie and Blank 1976:306). Formal settlement patterns have not been observed; however, it was suggested that the habitation area of this site may exist just to the north of the burial area (Scarry 1973). Close to 250 burials have been reported from the site (McKenzie and Blank 1976:317; D. Brose: personal communication). Interments were discovered to be closely spaced, and consisted mostly of rows of primary, fully extended, individual interments (McKenzie and Blank 1976:308). Individuals tended to be oriented east-west, and close to a third of all the burials are reported to have contained grave offerings, including ceramic vessels, pipes, shell and bone beads, and ornaments (McKenzie and Blank 1976:317). Of the individuals analyzed, 10% were infants, 21% were children or young adults, 52% were adults and 16% were over 40 years of age (McKenzie and Blank 1976:318). More recent investigations suggest that children and older adults are more common within the sample than previously indicated (D. Brose: personal communication). Sexed individuals show a slight bias towards males (54%). Information on post-mortem alterations is unavailable. Of the faunal material recovered from the site, fish, in particular drum, represent over 90% of the identified faunal collection (Scarry 1973:51; D. Brose: personal communication), again suggesting that mortuary ceremonies for a large community were likely scheduled to coincide with spring fish harvests.

Finally, preliminary analysis of the Pearson site, located on Green Creek just south of Sandusky Bay (Figure 7.1), has documented another Eiden-like cemetery (Stothers and Abel 1989). Pearson actually consists of a cluster of three site areas, including two village areas enclosed by a ditch feature (Stothers and Abel 1989:113). In addition to Eiden Phase material, two other components dating to the early and late Wolf Phase were documented. A total of 546 burials were excavated at the site, 477 of which are believed to be associated with Eiden Phase Mixter-like ceramics. All but five of these interments were fully extended primary burials, oriented east-west (Stothers and Abel 1989:122). Over 400 of the burials were interred into 15 discrete, linear rows, similar to the practices observed at Eiden. Interestingly, three burials contained individuals who had been placed face down in the pit (Stothers and Abel 1989:122), two of which showed obvious evidence of violent death (i.e. multiple projectile points embedded into various parts of the skeleton). Few of the graves yielded offerings. As with Eiden and other mortuary centres, faunal remains associated with this component reflected the importance of fish with large quantities of drum and walleye being recovered. Large quantities of deer and other mammals are also reported (Stothers and Abel 1989:119).

To review, the presence of possible special structures for burial activities, such as those found at Lucier, Younge and possibly Libben, further emphasizes the ritual aspects of Western Basin mortuary practices -- practices which have confounded archaeologists since their discovery in the 1930's (Fitting and Zurel 1976:227). Greenman felt that the Younge site burials, placed within very long and narrow structures, represented a mortuary pattern which incorporated elements of both the Algonquian "Midewiwin" and Iroquois "Feast of the Dead" ceremonies (1937:89-95). Other researchers have also seen similarities between the structures from Younge and the ethnohistorically documented Algonquian Midé lodges (e.g. Brose 1978b, in press; R. Mason 1981). Krakker (1983:490) has suggested that the multiple interments at these sites represent evidence of periodic mortuary events incorporating a larger group than just immediate kin. He concludes that a lineage, clan or community sized group participated in these events (Krakker 1983:490). It could be further suggested that the mortuary events conducted at sites like Libben, Younge, Eiden and Riviere au Vase provided opportunities for regional groups to interact at regular intervals. Additionally, the evidence from the Ohio sites of spring harvesting of fish in conjunction with burial practices could

have been further incentive for numerous, perhaps loosely allied groups, to gather together on a regular basis (D. Brose: personal communication). Such gatherings could have provided opportunities for the maintenance of alliances between different lineages and regional groups. Finally, perhaps such events also were a contributing factor in the development and regulation of increasingly larger, possibly coalescing lineages during the Springwells Phase, leading to the larger, centralized and more sedentary communities of the Wolf Phase. Again, future investigations of mortuary sites are an essential requisite for understanding socio-political development during the Western Basin Tradition.

Briefly, it should be mentioned that the post-mortem alterations on many of the skeletons found at sites such as Riviere au Vase, Libben, Gard Island, Lucier, Younge, and elsewhere on mortuary sites of the Western Basin Tradition, have been variously interpreted as serving functional or spiritual purposes (B. Redmond 1982). Hall (1979) has suggested that the drilled holes on long bones and skulls represent locations from which spirits could enter and leave the body. Drilled holes thus may represent efforts to release evil spirits within the deceased's body (Hall 1979:262). Perhaps a more plausible interpretation is suggested by Greenman. He notes that drilled holes in the end of longbones and skulls may have been used to rearticulate or tie together defleshed bones (Greenman 1937:92). Tying bones together would have provided an adequate means to transport burials from places where individuals had first been buried to sites like Younge for ceremonial reburial, or to move the remains from one place in the enclosure to another. B. Redmond also supports this interpretation (1982:26-27). While the presence of skull gorgets have been interpreted within an Iroquoian context as representing evidence of cannibalism (J. Jamieson 1983; J. Wright 1966), on Western Basin sites they have been interpreted as "heirlooms", taken from the skulls of dead ancestors and kept by the living for remembrance and other reasons (Stothers and Graves 1983; Wahla 1963).

Information on the burial practices used during the Wolf Phase in southwestern Ontario is almost completely unknown. What little evidence is available suggests that most burials occur in the larger villages, although this may be more a reflection of a very weak database. Nonetheless, given the changes in settlement patterns which occurred during the Wolf phase (mainly the development of earthworked settlements), it may be that many aspects of earlier mortuary rituals had become incorporated into the sphere of these larger communities. The rituals which previously had brought Western Basin regional groups together may now have been conducted within a single settlement which itself may have been comprised of several of what were formally separate, dispersed regional groups.

For both the Parker Earthworks and at Weiser, there are unconfirmed reports that low mounds containing burials had been located just to the north of each site (T. Lee 1958:15; P. Reid 1978a:5). However, within the areas of the sites excavated, only a few fragments of human remains were found, either in topsoil inside the earthwork (T. Lee 1958), or as part of a plough disturbed burial (P. Reid 1978a:16). Other evidence supporting mounds as part of earthworked settlements, which may or may not have contained burials, comes from several poorly documented sites in Michigan, where low mounds were noted adjacent to main entranceways (Fitting and Zurel 1976:240-241). Also, the bastions reported from the Cedar Creek earthwork (Knight and Ramsden n.d.: 38) may actually be similar features.

The most recent and detailed information on late Wolf Phase burial practices from southwestern Ontario resulted from the accidental discovery of a large burial feature on the Miller property near the Sydenham River in Wallaceburg (Ferris et al. 1990; Spence 1990). Located approximately 200 metres north of the area where material had been documented from the Libby site, this feature had been partially impacted by service trenching. The pit measured 182 by 49 cm, was basin-shaped in profile, and contained the remains of at least eight individuals. Many more individuals may have been present, since the analyzed remains consisted of only that material removed by police prior to the feature being investigated, and the remainder of the pit was simply stabilized and back-filled (Ferris et al. 1990:3). The examined remains included elements from three males, one female, three children and a newborn. Skeletal elements recovered represent the major bones of the body, although ribs and vertebrae were almost entirely absent. All individuals represented were secondary interments, and the consistency in recovered bone present for each individual suggests that the selection of elements for inclusion in the final burial followed an intentional and well-defined process (Spence 1990). This process likely involved exhuming primary burials at an appro-

priate time, then removing any remaining flesh. Two individuals showed evidence of dismemberment, which was probably done to reduce partially articulated skeletons into bundles for reburial (Spence 1990:20). Earlier patterns of post mortem alterations were not noted on the Miller remains; however, cut marks on the crania of two individuals are interpreted as the results of deliberate scalping (Spence 1990). Additional evidence that violence played a role in the deaths of these individuals was not noted and further data is required before it can be determined if this scalping was strictly a hostile event, or if it was a regular form of post-mortem alteration practiced during the Wolf Phase (Spence 1990:21).

The Miller burial represents the latest-dating evidence for Wolf Phase mortuary practices in Ontario, although the procedure appears to be quite similar to the patterns observed on later sites in northwestern Ohio. For instance, at the Fort Meigs site bundle burials, small ossuaries and scattered human bone were all documented (Rutter 1984:185). A human parietal fragment surface collected from the site displays numerous cut marks which may once again be evidence of some form of scalping. In one midden nearly a third of the faunal sample consisted of human bone and has been interpreted as evidence of cannibalism (Rutter 1984:185-186). However, since no element breakdown of this material is provided, a possible alternative explanation should be considered. If the bulk of these remains consisted of vertebrae or ribs, then the bones from the midden may be evidence of preparing skeletons for reburial. Further information on late prehistoric - early historic burial practices has been obtained from the Indian Hills site. At that site, three ossuaries have been reported, one of which was badly disturbed but still contained close to 100 individuals (Graves 1984:364). Ossuary burial at Indian Hills consisted of placing secondary bundles or partial skeletons into a large feature (Graves 1984:364, 382). Elsewhere on the site, primary extended burials were found in complete or nearly complete condition, almost always with the feet facing north. An unusual burial feature consisted of five distinct clusters of bone from five individuals (Graves 1984:370). This feature contained most of the skeletal elements that Spence noted were missing from the Miller feature, which suggests that mortuary patterns for the late Wolf Phase were standardized over a wide region.

Finally, Wolf Phase burial components have been reported from a number of the Ohio cemetery sites discussed earlier (i.e. Libben, Eiden, Pearson), although these components are not as well represented and documented. At pearson, Stothers and Abel (1989:119) report that a few burials (20) were exclusively associated with strap-handled, notched strip applique Fort Meigs-style ceramics. These consisted of both flexed and bundle burials. Most of the flexed burials contained grave offerings. Bundle burials at Pearson comprised two distinct types: pits containing several individuals, represented by disarticulated long bones and skulls; and pits containing articulated body segments absent in the former pit type (i.e. hands, feet, torso). This pattern reflects one similar to that suggested for the Libby-Miller remains. At Pearson these late Wolf Phase burials are randomly scattered across what is believed to be the interior of a village occupation, rather than being a discrete cemetery area.

This review of mortuary patterns for the Western Basin Tradition does more to illustrate the many and strong deficiencies in the existing database than to identify any meaningful trends. These difficulties include associating mortuary patterns with Western Basin lifeways and material culture; the lack of comparative osteological data to allow for meaningful examinations of diet, disease and ethnicity; and the difficulty in identifying particular mortuary features to specific periods of the Late Woodland. Unfortunately, given present political realities, it is not likely that substantive information will soon be forthcoming to resolve many of the questions which remain.

A Question of Ethnicity

A final issue which must be addressed is the possible ethnic affiliation of the Western Basin peoples of southwestern Ontario. One researcher, David Stothers, has long held that these people were a westerly extension of the Ontario Iroquoian cultural-linguistic group (Stothers 1975a, 1975b, 1977, 1978, 1981; Stothers and Abel 1989; Stothers and Graves 1983; Stothers, Graves and Conway 1984; Stothers, Graves and Redmond 1984). This view is also shared by several of Stothers' colleagues and former students (i.e. Graves 1984; Redmond 1984), and has been tentatively endorsed by Fitting and Zurel (1976) and R. Mason (1981:342-350). Others have tentatively offered a possible Central Algonquian cultural-linguistic affiliation for the prehistoric peoples of the western Lake Erie drain-

supported by many researchers in the region (e.g. J. Bowen; D. Brose; W. Lovis; I. Kenyon; M. Pratt: personal communications), generally the issue of ethnic affiliation for the Western Basin Tradition has been avoided. Indeed, Brose (1971, 1978b) has pointed out the many limitations of associating ethnic identity with prehistoric groups in this region, due to the events which occurred during the first half of the 17th century. While we agree with Brose's hesitation and do not believe that specific tribal groups can be safely tied to prehistoric manifestations in the region, determining broader, cultural-linguistic affiliations has important implications for interpreting Western Basin Tradition culture history. Consequently, we feel impelled to briefly review the arguments here.

As a first step, it is important to understand the chronological events which make up Stothers' interpretation of regional culture history. His story begins during the Middle Woodland (Stothers 1975a; in press; Stothers, Graves and Redmond 1984), when the then indigenous, Algonquian peoples of the western basin of Lake Erie were displaced, and forced south and east towards Sandusky Bay in Ohio, as a result of Iroquoian peoples moving into southwestern Ontario, and eventually settling as far south as the Maumee River Valley. The Iroquoian groups who established themselves in this region eventually gave rise to the Riviere au Vase through to the Springwells Phases of the Late Woodland Western Basin Tradition. Meanwhile, the displaced Algonquian groups had re-established themselves in the region between Sandusky Bay and present day Cleveland, where they developed into the Late Woodland Sandusky Tradition (Stothers and Pratt 1980). By the 13th century A.D. this group had undergone a cultural transformation due to the influence of Mississippian groups located further to the south. These changes led to the development of an agriculturally oriented-fixed village settlement-subsistence strategy during the Eiden Phase, which was also marked by the use of Mixter ceramics. By the end of the subsequent Wolf phase (ca. A.D. 1400), Sandusky Tradition peoples had expelled the Iroquoian groups out of the western end of Lake Erie. Apparently this expulsion was in part the result of splinter or sister groups leaving the Sandusky homeland and moving west and north, re-settling in areas where there was access to lands suitable for large-scale agriculture (Stothers and Abel 1989:109; Stothers and Bechtel 1987). In the wake of this expansion, refugee Western Basin Tradition peoples supposedly moved east, coalescing with and becoming a part of other Iroquoian groups (i.e. the prehistoric Neutral). Thus by the start of the 15th century much of southwestern Ontario had been abandoned, and remained so until well into the historic period (Stothers 1978; Stothers and Graves 1983; Stothers, Graves and Redmond 1984). Subsequent Sandusky Tradition development in the extreme western end of Lake Erie reflected Mississippian-influenced patterns of settlement-subsistence and material culture. Finally, in the early 17th century Neutral Iroquoian war parties re-invaded the western end of Lake Erie, ultimately dispersing the Sandusky Tradition peoples, whom Stothers (1981) has argued were historic Mascouten.

Stothers has used several lines of reasoning to argue an Iroquoian ethnic affiliation for the Western Basin Tradition. These include similarity of ceramic styles; settlement-subsistence patterns; mortuary data; and osteological studies (Stothers 1975a, 1978; Stothers and Graves 1983; Stothers, Graves and Redmond 1984; Stothers et al. 1978; Stothers and Pratt 1980, 1981). Unfortunately, it is virtually impossible to get at the substance of his many claims, in order to objectively consider them, due to the way they are presented in publications. As anyone familiar with the library of Stothers' work will know, there is a tendency for him not to substantiate his interpretations with hard data, choosing rather to cite conference papers, unpublished manuscripts or field notes generated by himself or his students, which of course are largely inaccessible to his audience (For example, examine the references which are cited as sources of data supporting claims in Stothers and Graves 1983; Stothers, Graves and Redmond 1984; Stothers and Abel 1989; see also the introduction in Stothers 1978). This is exacerbated by the fact that Stothers tends to favour publishing synthetic overviews of the Late Woodland, which are long on inference but vacant of real data (e.g. Stothers 1975a, 1978; Stothers and Graves 1983, 1985; Stothers, Graves and Redmond 1984). With the exception of Brose (in press), this style of argument and presentation is one reason why critical reviews of Stothers' interpretations of the Western Basin Tradition have not appeared in publication. While we also find it difficult to comment on or evaluate Stothers' claims, a critical review of his ethnicity affiliation argument is warranted, in light of the information now available from southwestern Ontario.

The critical lynchpin of Stothers' ethnicity argument is his repeated claim that there are overwhelming similarities in ceramic assemblages for both the Western Basin and Ontario Iroquoian Traditions, while stressing differences in ceramic trends between the Western Basin and Sandusky Traditions (Stothers 1975a; 1978; Stothers and Graves 1983; Stothers and Pratt 1980, 1981). In his overview of the ethnicity question, Stothers (1978:25) stated:

> I indicated earlier (Stothers 1975a:22-24, 1977:44-46, 140-153) that there are striking similarities between the three sequential phases which form the Late Woodland terminus of the Western Basin Tradition (i.e. Riviere aux Vase; Younge and Springwells phases), with contemporary developmental periods in the western branch of the Ontario Iroquois (i.e. Princess Point; Glen Meyer; Uren-Middleport). Recent comparative studies have strongly indicated that these similarities are the result of much more than constant cultural contact due to geographic proximity at all time levels.....The amazing correspondence of ceramic types, and common ceramic attribute clusters, suggests ethnic affiliation.

The two references cited in the above quote offer the reader only generalized personal observations of perceived ceramic similarity, rather than providing qualitative and quantitative analyses of site assemblages. Furthermore, despite his suggestion to the contrary, we are not aware of even a single comparative study which has examined Western Basin and Ontario Iroquoian ceramic assemblages. Frankly, until such a study is accomplished, we can no more substantively demonstrate differences between Ontario Iroquoian and Western Basin ceramic assemblages than Stothers can demonstrate similarities.[4]

Likewise, although Stothers has also argued that there are substantial differences between Sandusky and Western Basin Tradition ceramic assemblages (Stothers and Pratt 1980, 1981), no comparative studies have tested this hypothesis. Nonetheless, we would agree with Stothers that there are notable stylistic differences between Eiden Phase assemblages of the Sandusky Tradition, where emphasis is on Mixter wares, and late Younge and Springwells Phase assemblages, where ceramic preferences are more Iroquoian-like. However, this is as far as our agreement goes. As Brose (in press) has pointed out, Stothers has failed to acknowledge that the same early Late Woodland base which gave rise to Younge and Springwells Phase ceramics also gave rise to the Eiden ceramic style, which suggests some kind of association or relationship between the two groups. Furthermore, despite obvious rim variation, we would argue that overall vessel form and manufacture reflect striking similarities between the two traditions (e.g. Figures 7.2, 7.16 and 7.21). Indeed, the information from southwestern Ontario indicates that Eiden Phase influences can be found during the late Springwells Phase period of this region, with the appearance of Mixter-like variants appearing in local assemblages (e.g. Figure 7.19). Additionally, early Wolf Phase Parker Festooned wares show few variations in overall vessel form from late Springwells Phase pots. Admittedly, the available data from southwestern Ontario is still minimal and all that can be offered currently are personal observations which differ from Stothers. However, we do feel that information from southwestern Ontario increasingly points to an easy, local transition in ceramic styles between the Springwells and Wolf Phases. This would imply cultural continuity in southwestern Ontario during the last part of the Late Woodland, rather than group abandonment and subsequent replacement, as suggested by Stothers. Such claims, of course, cannot be supported with hard data at present, since detailed comparative studies of ceramic assemblages have not been accomplished. Nonetheless, at the very least there would presently appear to be enough evidence to adequately challenge the validity of Stothers' claim that ceramic similarities and differences support an Iroquoian ethnic affiliation for the Western Basin Tradition.

Stothers has also suggested that Western Basin settlement-subsistence patterns mirrored Ontario Iroquoian developments, thus supporting an Iroquoian ethnic affiliation for the former (Stothers and Graves 1983; Stothers, Graves and Redmond 1984; Stothers and Pratt 1980). However, data recovered from southwestern Ontario in the last few years suggest a much greater degree of variation between the two groups than implied by Stothers. For instance, up to the end of the Younge Phase warm weather subsistence appears to have consisted of seasonally mobile groups who coalesced and dispersed depending on time of year and the availability of resources. There is no evidence to suggest that agriculture played a significant role in the subsistence strategies employed by these people. This is a markedly different pattern from that documented for Early Ontario Iroquoian groups, who apparently had developed substantial warm and cold weather villages, and relied much more heavily on maize and other cultigens (see Williamson: this volume). While subsequent Springwells Phase peoples likely established fixed warm weather

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[4] To achieve a comparable level of "analysis", the reader is encouraged to consider the dominant ceramic trends outlined in this chapter for the first three phases of the Western Basin Tradition in comparison with the contemporaneous Ontario Iroquoian periods discussed by Fox; Williamson; and Dodd et al.: this volume.

settlements, and increased their emphasis on agriculture, this was part of a subsistence strategy which still allowed people to exploit the same diverse range of resources utilized previously. Also, winter dispersal into small groups was maintained during this period. By contrast, contemporary developments during the Middle Ontario Iroquoian period included the formalization of village life, marked by an increase in the size of villages and number of longhouses within a particular village, as well as the entrenchment of agriculture as the main subsistence strategy utilized by these people (see Dodd et al: this volume). Finally, there are also significant differences in settlement-subsistence between the Wolf Phase and the contemporaneous prehistoric Neutral period (see Lennox and Fitzgerald: this volume), but since Stothers does not believe the Wolf Phase is a part of the Ontario Iroquoian Tradition, no further comment is required.

In addition, it is worth pointing out that specific site types documented for the Western Basin Tradition are unknown for the Ontario Iroquoian Tradition, further arguing against Stothers' claim of a shared way of life for these two groups. For example, sites like Robson Road and Bruner-Colasanti, characterized by hundreds of large storage features and lacking structural data, appear to be unique to the Western Basin. As these sites are believed to have served as seasonal extraction locales by a people who maintained a mobile seasonal round, it is not surprising to learn that comparable sites are not a part of the Ontario Iroquoian Late Woodland. An additional site type which appears to be unique to the Western Basin Tradition is represented by the Sherman site, although Stothers (personal communication) has suggested that the Sherman house may simply be an example of an Iroquoian small house, reported from a number of prehistoric and historic Ontario Iroquoian sites. However, these Iroquoian structures do not conform to the Sherman example in areas of size, structure, or internal configuration. Moreover, Iroquoian small houses are a *structural* type which generally are documented from village sites - to date no Iroquoian *site* type has been documented which conforms to the Sherman site. Finally, regarding structural comparisons, Stothers has suggested that longhouse-like structures seen from Western Basin Tradition sites such as Liahn I and Younge reflect cultural affinities to the longhouse-dwelling Ontario Iroquoians (Stothers 1978; Stothers and Graves 1983). However, ethnographically the use of longhouses is known for non-Iroquoian speaking groups such as the Delaware and various Algonquian groups from the American Atlantic coast (Brose in press; Goddard 1978b:218; Feest 1978:259). Furthermore, the Younge site enclosures do not appear to have been day-to-day habitations. It has been suggested that they served as charnel houses (Brose: in press), and that they are more reminiscent of Algonquian Midewiwin lodges than they are of Iroquoian domiciles (e.g. Greenman 1937; Krakker 1983; R. Mason 1981).

Unfortunately, very little comparable settlement-subsistence data is available for the Eiden Phase of the Sandusky Tradition, outside of synthetic overviews (Stothers and Graves 1983; Stothers, Graves and Redmond 1984; Stothers and Pratt 1980). Nonetheless, that there is sufficient reason to believe Western Basin and Ontario Iroquoian settlement-subsistence varied significantly, and this undermines another element of Stothers' ethnic affiliation argument.

The final two lines of reasoning which Stothers offers as support of his ethnicity hypothesis - burial patterns and osteological studies - can also be called into question. For instance, Stothers has suggested that the appearance of ossuaries and mass bundle burials on Western Basin and Ontario Iroquoian sites reflects ethnic similarity (Stothers 1975a, 1978). However, Brose (in press) pointed out that mass bundle burials are also known from archaeological sites representing a wide range of chronologically and culturally dissimilar groups, and that ossuaries are known ethnographically for some Algonquian groups, while are rare or unknown for some Iroquoian groups. Additionally, an element of Western Basin Tradition mortuary patterns which would seem to suggest difference is the practice of post mortem alterations, as evidenced by drilled skulls and longbones and the removal of skull disks. This practice is extremely rare if not unheard of for the Ontario Iroquoian Tradition (M. Spence: personal communication). While not directly addressing this discrepancy, Stothers and Graves (1983) have suggested that skulls with disks removed in Western Basin Tradition burials are related to skull disks found in Ontario Iroquoian burials, and reflect ancestor worship by Iroquoian descendants of Western Basin Tradition groups. However, no study was cited to support this claim, and Stothers and Graves do not suggest why the practice of removing disks from skulls would have stopped after Western Basin peoples joined up with other Iroquoian groups.

Stothers has also suggested that biocultural data is available to support his ethnicity argument, although the data he cites as support appear, upon examination, to be based on fairly preliminary and inconclusive studies, derived from a small and limited database (Lozanoff and Stothers 1975; Stothers et al. 1978). For instance, discrete trait comparisons of the Gard Island cemetery population (late Riviere au Vase or early Younge) to other Ohio collections could only suggest that Gard Island had some affinities to a population from a Middle Woodland site, and perhaps to a population from a supposedly Sandusky Tradition site (Lozanoff and Stothers 1975:27). Further comparisons of Gard Island discrete traits was limited to an Ontario Early Woodland population (Serpent Mounds) and two Early Ontario Iroquoian populations (Serpent Mounds, Miller), also proved to be inconclusive (Lozanoff and Stothers 1975:32; Stothers et al. 1978:22). While Stothers has subsequently suggested that these studies confirm a biological relationship between the Western Basin and Ontario Iroquoian Traditions (Stothers and Graves 1983), such a claim is dubious, and the reader is encouraged to examine the references cited to determine the conclusiveness of these osteological examinations. While osteological examinations may hold the potential for answering questions regarding ethnicity, we are simply a very long way off from obtaining meaningful and comparable populations which may provide answers.

More recently, stable carbon isotope analysis of skeletal remains (which has been used to measure consumption of plants such as maize) has been cited as reconfirming the cultural distinctiveness of the Western Basin and Sandusky Traditions (Stothers and Bechtel 1987). This study examined skeletal remains from sites covering the Late Archaic to the end of the Late Woodland, and while the small sample sizes from the sites examined can be questioned, it is the interpretations of the results which are most dubious. Findings suggested that Western Basin populations (Riviere au Vase to Springwells) consumed less maize, and thus were less intensive agriculturalists, than the Sandusky Tradition populations examined (Wolf Phase). However, the Western Basin sites used for this study all dated earlier in time than any of the Sandusky Tradition Late Woodland sites. Consequently, rather than documenting two distinct cultural expressions of subsistence, the obvious conclusion would seem to be that early Late Woodland groups (pre-A.D. 1300) generally consumed less maize than later Late Woodland groups (post-A.D. 1300), which is likely the case throughout the lower Great Lakes. A more meaningful comparison would have been of population samples from contemporaneous Western Basin and Sandusky Tradition sites. This criticism could also be extended to the results from a study of dental caries in populations obtained from several Western Basin and Sandusky Tradition sites (Sciulli and Schneider 1985b). Rather than reflecting culturally distinct settlement-subsistence strategies, all that could be demonstrated is that dental caries increases through time during the Late Woodland, presumably reflecting increased maize consumption (Sciulli and Schneider 1985:24-25).

A final area which undermines the credibility of Stothers' ethnicity argument is his occasional tendency to present inconsistent interpretations. While more than one example can be cited (i.e. suggestions regarding the origin of ossuaries and mass bundle burials or explaining away the appearance of Wolf phase ceramics on Ontario Iroquoian sites which date later than his ceramic seriation would allow; see Stothers and Graves 1983; Stothers, Graves and Redmond 1984; Stothers Graves and Conway 1984), the one example most germane to the present discussion can be found in Stothers and Graves (1985). There an attempt was made to identify the prehistoric antecedents of the Central Algonquian tribes known historically from the area between Lakes Erie, Huron and Michigan (i.e. suggesting that the Sandusky Tradition is ancestral Mascouten; the Whittlesey Tradition in northcentral Ohio is ancestral Kickapoo; etc.). Curiously, Stothers and Graves identified a Late Woodland Saginaw Tradition from east central Michigan as being the prehistoric antecedents of the Sauk and Fox (Stothers and Graves 1985:155, 161). The proposed geographic range for this tradition encompasses an area extending north from Detroit and west of the St. Clair River as far as Saginaw Bay (Stothers and Graves 1985:175). What is curious is that this area includes sites such as Younge, Riviere au Vase and Wolf, all of which have been used to type and define the Western Basin Tradition. Essentially, Stothers and Graves have defined much of the Western Basin Tradition geographic region as being ancestral Central Algonquian. Why Riviere au Vase through to Springwells Phase sites in the Saginaw Tradition region should be considered prehistoric Algonquian, while comparable sites immediately adjacent to this area in southwestern Ontario, southeastern Michigan and northwestern Ohio should be considered prehistoric Iroquoian, is difficult to understand.

For the reasons discussed above, we feel that there are sufficient grounds to question the validity of Stothers' claim that the ethnic affiliation of the Western Basin Tradition was Iroquoian. In all fairness, however, it should be pointed out that we are reviewing Stothers' interpretations from a position of having access to a greater amount of data than was available when Stothers formulated his hypotheses. Certainly a poorly documented assemblage of sites from southwestern Ontario in particular, and from the western basin of Lake Erie in general, can be pointed to as the origin for at least part of Stothers' misinterpretation of Western Basin culture history. Consequently, Stothers saw cultural distinctiveness in ceramic assemblages from some poorly documented site collections, which lacked meaningful settlement subsistence information. With the data obtained from southwestern Ontario over the last decade, it is now perhaps more reasonable to suggest that this material culture distinctiveness between Western Basin and Sandusky groups likely represents internal regional variability - opposite ends of the same cultural continuum - rather than a manifestation of two distinct linguistic groups. As well, the significant differences in settlement-subsistence between the Western Basin and Ontario Iroquoian Traditions seems to us to represent a more meaningful cultural distinction than shared or distinct rim decorative motifs on clay pots.

Assuming that we have refuted an Iroquoian affiliation for the Western Basin Tradition, what then is the alternative? This may well be a question which cannot be satisfactorily answered, since researchers of the Western Basin Tradition do not have the opportunity of applying the direct historic approach to the archaeological record (Brose 1971), as Iroquoian researchers do in other parts of southern Ontario. Indeed, some may argue that the very notion of searching for archaeological ethnicity is a waste of time. Nonetheless, throughout this chapter it has been made clear that we do hold an opinion regarding ethnic affiliation, and at the risk of being vulnerable to the same criticism leveled at Stothers, we would suggest that the Western Basin Tradition represents an Algonquian cultural group. However, it must be stressed that this designation is meant to be applied at only the broadest level of cultural affiliation. Certainly such a designation should not be interpreted as suggesting political or social affiliations with particular, historically defined Algonquian communities. Neither should it be taken to imply that we can determine if the people who left behind the archaeological record now under study spoke a specific dialect of a specific language group. Linguistic affiliations are meaningless within the archaeological record. Indeed, Iroquoian researchers cannot determine if a particular group of people represented at a particular archaeological site spoke one dialect of Iroquois or another. But at a broad cultural level, most archaeologists still understand what defines an Iroquoian site. Likewise, at this same broad level of description, most can comprehend the distinction suggested when referring to Iroquoian and Algonquian cultural groups. Thus it is at this most generalized level of ethnic affiliation that we suggest the Western Basin Tradition reflects an Algonquian cultural group.

Primary support for this claim is still tenative, but as a start we must stress the settlement-subsistence patterns observed for the Western Basin Tradition. The emphasis in the Western Basin on a diverse subsistence strategy with a high degree of mobility until perhaps late in the prehistoric period is contrary to the accepted Ontario Iroquoian settlement-subsistence pattern of fixed settlement and intensive agriculture. At the same time, the settlement-subsistence patterns for the Western Basin Tradition are similar to those recorded for Central Great Lakes Algonquian groups (e.g. examine various chapters in Trigger [editor] 1978). Additionally, comparisons between the Western Basin Tradition and the Ojibwa who occupied southwestern Ontario by the beginning of the 18th century, point to a shared pattern of livelihood (Ferris 1989a). While obvious temporal limitations must qualify the comparison, it is worth pointing out that the Ojibwa maintained a schedule of subsistence activities (both in areas of resource exploitation and group coalescence-dispersal), which mirrored the pattern proposed for the first half of the Western Basin Tradition. If we accept that the Western Basin Tradition represents an Algonquian cultural group, then it is not surprising to find that two different Algonquian groups managed to utilize the same geographic region in a similar fashion. A final point to raise is that the structure from the Sherman site exhibits similarities, in areas of size, structural detail, orientation, internal features and interior organization of space, with ethnographic descriptions of Algonquian winter lodges or wigwams. We realize, however, that this does not mean that the people who lived in the Sherman structure were necessarily Algonquian. Moreover, until more sites like Sherman can be documented, the site has the potential of representing a deviation from what the norm was for Western Basin winter sites. Nonetheless, should Sherman prove to be a common site type for the Western Basin Tradition, and distinct from the Ontario Iroquoian Tradition, then it may be that this kind of site represents an ethnic marker for the Western Basin Tradition.

Of course, we are assuming that these Western Basin peoples were the ancestors of the Central Algonquian groups known to have resided between Lakes Erie, Huron and Michigan during the early 17th century, referred to collectively at the time as the Gens de Feu (Heidenreich 1988). However, despite the suggestions offered elsewhere (e.g. Fox 1989a; Graves 1984; Steckley 1983; Stothers 1981; Stothers and Graves 1985), we agree with Brose (1971; 1978b) that it would be extremely difficult, if not impossible, to associate specific, historically-defined tribal communities with the archaeological record. Our intention has been only to suggest that the archaeological manifestations which comprise the Late Woodland Western Basin Tradition in southwestern Ontario were left by an Algonquian cultural group who maintained a way of life distinct from, but clearly influenced by the adjacent Iroquoian peoples in southern Ontario. We acknowledge that our assertion of ethnic affiliation suffers from the same weakness of data and lack of testing that Stothers' assertion does. Nonetheless, had we simply ignored the issue, we would have avoided some of the critical implications arising from the settlement-subsistence patterns presented in this chapter. Indeed, had we chosen to avoid the subject of ethnicity altogether, we perhaps would have been implicitly supporting Stothers' views which we certainly do not wish to do. As it stands now, a great deal of work is required before answers can be reached; however, we do believe that future investigations, both by defining regional manifestations of Western Basin material culture, and by increasing our understanding of their seasonal cycle, will both refine and reinforce our current interpretations.

Conclusions

As stated at the outset of this chapter, our intent here has been to present the available data from a previously unexamined part of the Late Woodland archaeological heritage of southern Ontario, and by doing so, to introduce the Western Basin Tradition into the research "canon" of Ontario archaeology. Clearly, the available data is only now beginning to allow for some understanding of the developmental sequence of this Late Woodland group, both in terms of material culture and settlement-subsistence. However, much remains unknown. For example, at present both the Riviere au Vase and Wolf Phases still require substantial investigations prior to defining basic trends through time, while the Younge and Springwells phases are raising a whole new series of questions about socio-political behaviour and structure. Also, developing regional sequences for parts of southwestern Ontario are sorely needed, as are comparative studies between regions with properly defined sequences of occupation. Finally, while we have attempted to address the issue of ethnicity, we realize that we are a long way off from obtaining the needed data to substantiate these claims. But as a start, we stress the need for researchers to be cognizant, if not supportive, of the claim that these people followed an Algonquian way of life. This is critical for future investigation since sites like Bruner-Colasanti, Cherry Lane, Parker Earthworks, Sherman and Van Bemmel have shown that Western Basin archaeological sites simply do not "behave" as do Iroquoian sites from comparable periods. Thus, excavation and data recovery techniques which long ago were developed and perfected for Iroquoian archaeology may in fact be detrimental to recovering meaningful data during Western Basin site excavations. Hopefully Western Basin Late Woodland archaeology in southwesternmost Ontario can now be acknowledged as something separate from Ontario Iroquoian archaeology, but the long task of understanding the specific nature of this culture's prehistoric past has only begun.

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extend special thanks to Ian Kenyon, who's ability to clearly see patterns in the otherwise confusing mess of the Western Basin Late Woodland provided the initial interest which led to our involvement in this research. As well, Ian has provided us with invaluable critical insights during the production of this manuscript. Nonetheless, any errors or interpretive leaps of faith are solely the product, and fault, of the authors.

CHAPTER 8

IROQUOIAN SOCIETIES IN SOUTHERN ONTARIO: INTRODUCTION AND HISTORICAL OVERVIEW

David G. Smith

Introduction

In this chapter the development of practical, methodological and theoretical approaches to the investigation of prehistoric Iroquoian[1] societies in southern Ontario (after ca. A.D. 900) is outlined; substantive issues concerning the prehistoric/historic Iroquoians are explored in the following chapters of this volume. A separate discussion of the historical background of Iroquoian archaeology is included here primarily because this topic has received more attention for a longer period of time than any other subject in Ontario archaeology. The concentration on Iroquoian research has occurred for several historical reasons. One important factor is that there are more substantial and better preserved sites from the Late Woodland period, during which Iroquoian culture developed, than for any preceding period because this period is the most recent in time, included the greatest population densities in Ontario prehistory and saw the appearance of sedentary communities. Another factor is that Iroquoian peoples were among the first Native societies in southern Ontario to be contacted by Europeans in the seventeenth century A.D. and were the subject of the most complete ethno-historical descriptions (e.g. Biggar 1922-1936; Thwaites 1896-1901; Wrong 1939). The availability of such primary sources and the implicit assumption by Europeans that Native societies had changed little through time (Trigger 1980) encouraged the use of the Direct Historical Approach (i.e. the use of data on historic Iroquoians as an aid to interpreting the prehistoric record) and a focus on study of both historic and prehistoric Iroquoian societies.

The reader is referred to a number of more general studies for perspectives on how Iroquoian archaeology fits into the broader perspective of the history of archaeology in Canada and Ontario; these include Jenness (1932), Kidd (1952), Noble (1972) and Trigger (1981). For other detailed historical reviews of Iroquoian archaeology in Ontario see J. Wright (1966), P. Ramsden (1977a), Kapches (1981) and Pearce (1984); for a review of methods used in the study of Iroquoian societies see D. Smith (1983, 1987); for a review of theoretical models that have been employed in the study of Iroquoian prehistory see Trigger (1978a).

Two of the more important challenges that have confronted students of Iroquoian prehistory are: 1) developing an archaeological definition of Iroquoian culture and/or society; and 2) designating the period in time in which Iroquoian culture can be said to originate. These topics are dealt with in detail in subsequent chapters, but the following proposals are employed provisionally in this chapter. First, there would appear to be some consensus that prehistoric Iroquoian societies in Ontario encompass those people that practiced cultivation of imported crops (corn, beans, squash and tobacco) and lived in semi-sedentary village settlements; both of these characteristics are recognizable in the archaeological record. Second, it would appear that these two traits developed gradually in Ontario after about A.D. 500, and that the Princess Point Complex (Stothers 1977) can be viewed as transitional between non-

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[1] In this and the following chapters, the term Iroquoian is used in a general sense to refer to speakers of Iroquoian languages in the area, be they Huron, Neutral, Mohawk and so on. The term "Iroquois" will be used in a more restricted sense to refer in general to the "Five Nations" (e.g. Onondaga, Oneida, Mohawk, Seneca, Cayuga) of New York state (see Trigger, editor, 1978).

TABLE 8.1: Chronological Chart Showing Major Periods in Iroquoian Archaeological Research.

PERIOD	MAJOR THEORETICAL PARADIGMS	PRIMARY METHODOLOGICAL ORIENTATIONS
1650 - 1875	Migration	Speculation
1875 - 1945	Migration	Function: Artifacts
1945 - 1965	In Situ Hypothesis	General Chronology: Types
1965 - present	Ontario Iroquoian Tradition	Fine-grained Chronology, Ecology, Settlement Pattern: Attributes

cultivating and cultivating societies (see Fox: this volume).

The history of research on Iroquoian societies may be viewed, for the most part, as a continuum based on the contributions of a number of archaeologists. There have been, however, several important shifts in both methodological and theoretical approaches that appear to have occurred at specific times in the growth of Iroquoian archaeology in Ontario. This development has been influenced from a number of directions, the most important of which are Americanist archaeology in general (see Willey and Sabloff 1980) and American Iroquoian archaeology in particular. In the discussion below both the external influences and internal trends of Ontario Iroquoian archaeology will be examined.

Table 8.1 provides an outline of the major periods that have been defined for purposes of this discussion. Each of these will be examined in the following sections.

Speculation (ca. 1650 - 1875)

Early students of Iroquoian archaeology working in the late nineteenth and early twentieth centuries were heavily influenced by prevailing migrationary hypotheses that were employed to explain the presence of Iroquoian societies in northeastern North America. These theories proposed that, within a few hundred years before the arrival of Europeans, Iroquoian peoples had migrated from some previous homeland, displacing indigenous Algonquian populations. The first documented speculation of Iroquoian migration was proposed in 1641 by Jerome Lalement, a Jesuit missionary residing among the Huron (Jesuit Relations 1896-1901[21]:193-195). Later versions of the migrationary scheme varied in identification of the original Iroquoian homeland (see Hale 1882; Lighthall 1899; Beauchamp 1894; A. Parker 1916).

The migrationary hypotheses were proposed by ethnographers and historians who did not employ archaeological data. Their interpretations were based on meagre historical records, Native oral traditions, and ethnological data, with little attention paid to the archaeological record (Trigger 1978a). Since Iroquoian groups were thought to be relative newcomers to the region, it was expected that their material culture would show only minor change through time, an attitude that discouraged periodization of Iroquoian prehistory. In addition, these early researchers had no recourse to chronometric techniques such as radiocarbon dating to indicate temporal depth of Iroquoian societies in northeastern North America.

Function: Artifacts (ca. 1875 - 1945)

It was only when researchers began to discover the kind and amount of data that could be recovered from the archaeological record that examination of artifacts began to compliment other sources of information on Iroquoian societies. This developing interest was a reflection of general trends toward more systematic approaches to prehistory occurring in North America during what Willey and Sabloff (1980:34) call "The Classificatory-Descriptive Period (1840-1914)." There was, however, little concern with chronology because migration hypotheses for the origin of Iroquoian societies continued to prevail. The theory that became the most widely accepted in the early twentieth century was known as the "southern hypothesis," first proposed by H.M. Lloyd (1904). Its general tenets were that Iroquoian peoples had migrated into the lower Great Lakes region in the late prehistoric period from their original homeland in the southeastern United States and had displaced indigenous Algonquian groups (Trigger 1978b:13).

Instead of being concerned with chronology, researchers such as William M. Beauchamp and Arthur C. Parker in New York State concentrated more on functional interpretations (e.g. Beauchamp 1898; A. Parker 1907). Function, in this context, meant the reconstruction of technical and economic lifeways at individual sites, with space and time assumed to be under control. The units of analysis were artifacts treated as physical objects that could be sorted into categories reflecting their functional utility such as cooking pots, bone awls or projectile points/hunting implements.

In Ontario, this focus was reflected in the work of David Boyle and William J. Wintemberg (see Killan 1983 and Trigger 1978b for detailed discussions of Boyle and Wintemberg respectively). Boyle's primary contribution was to expand the available data base by assembling the first relatively representative collections of artifacts from Ontario (see Boyle 1895, 1906), and by documenting a large number of Iroquoian sites (see Boyle 1896a, 1903). It was Wintemberg, however, who began extensive and systematic investigation of Iroquoian societies in Ontario. He conducted surveys of areas in southern Ontario (e.g. Wintemberg 1900, 1903) and excavated a number of important Iroquoian sites such as Uren, Southwold, Roebuck, Lawson, Sidey-Mackay and Middleport (Wintemberg 1928b, 1935, 1936, 1939, 1946, 1948).

Although A. Parker (1907:539) had suggested some temporal differences among several Erie sites in Ohio, the idea that at least some prehistoric Iroquoian sites could be placed into a framework of successive developmental periods seems to have been seriously suggested first by Wintemberg. Based on an examination of the ceramic artifacts recovered from his excavations at the Uren, Middleport, and Lawson sites (Wintemberg 1928b, 1939, 1948), he proposed that these villages represented an Archaic stage, a Transitional stage, and a Pre-European stage respectively (Wintemberg 1931:66). Because all of these sites are located in southwestern Ontario, the historic homeland of the Neutral, Wintemberg saw these stages as limited to Neutral development; he did not recognize such changes among the sites attributed to other Iroquoian groups such as the Huron. Even though Wintemberg's three stage hypothesis was the forerunner of later period schemes, he did not question the migrationary explanations of Iroquoian origins, and he remained more interested in functional rather than chronological interpretations.

It is of significance that, although Wintemberg relied on groups of artifacts as physical objects for his functional studies, he began to examine attributes of artifacts in his limited spatial and temporal studies. He employed variables of vessel shape and decoration and a rudimentary form of seriation as the basis for his three-stage framework of Neutral development (see Wintemberg 1931:83-84). His study of attributes was, however, mostly intuitive and never very systematic.

Wintemberg's work included application of the Direct Historical Approach (D.H.A.), an interpretive method that has been described as "working back into prehistoric time from the documented historic horizon" (Willey and Sabloff 1980:114). The D.H.A. was later employed extensively by such researchers as MacNeish (1952a), Emerson (1954), and J. Wright (1966). This method is a powerful form of analogy if well-controlled, but is, unfortunately, liable to misuse and abuse (see P. Ramsden 1977a; Pearce 1984; D. Smith 1987). In addition, late in his career Wintemberg was influenced by the Midwestern Taxonomic System (M.T.S.), a hierarchical approach to the classification of cultural/artifactual traits that had been developed in the United States. Artifact assemblages from particular

sites were grouped into successively more inclusive categories including "focus", "phase", "aspect", "pattern", and "base" (McKern 1939:310). Iroquoian culture was considered to be an "Aspect" of the Upper Mississippi "Phase" of the Mississippian "Pattern" (Wintemberg 1942). Wintemberg divided the Iroquoian Aspect into four Ontario "foci" that reflected spatial division among historical groups such as the Neutral, Huron, and Petun, and introduced his three stage temporal division to the Neutral focus (Wintemberg 1931, 1942).

It was during the period from 1875 to 1945 that archaeology came of age in Canada and Ontario. With the work of Boyle and Wintemberg, as well as the contributions of other such devoted field researchers as Andrew Hunter (e.g. 1907), George Laidlaw (e.g. 1912) and Wilfrid Jury (e.g. 1937, 1941, 1948a), the available data base was greatly expanded and the groundwork was laid for all later research on prehistoric Iroquoian societies.

Chronology: Types (1945 - 1965)

During the decade between 1940 and 1950, extensive changes in the approach to Iroquoian prehistory came about in a rather abrupt manner. These changes were heavily influenced by developments in American archaeology that occurred in the first half of the twentieth century. Willey and Sabloff call this period in American archaeology "The Concern with Chronology (1914-1940)," and define its primary objective as the development of controlled temporal frameworks for archaeological materials (Willey and Sabloff 1980:83 ff.). It was during this period that seriation as a relative dating technique was introduced. Seriation relies on recognition of patterned variation in the archaeological record that is, in turn, based on principles of classification. As a result, many archaeologists during the first decades of the twentieth century directed their efforts toward typological studies (i.e. sorting of collections of pottery vessels into a series of different categories on the basis of certain co-occuring attributes such as a combination of certain decorative motifs and vessel rim profiles) for purposes of producing archaeological entities useful for seriation. The goal was to isolate types that showed historical significance, meaning that the nature and frequency of types would vary in a patterned fashion through time (see J. Ford 1938; Rouse 1939; Krieger 1944).

Greater interest in the chronology of Iroquoian societies was stimulated when, in the 1940s, researchers began to question the migrationary hypotheses of Iroquoian origins. James B. Griffin (1943) and Bertram S. Kraus (1944) argued that Iroquoian culture was an "Aspect" of the Woodland "Pattern" instead of the Mississippian. Griffin (1943) suggested further that archaeologists seriously consider the possibility that Iroquoian peoples were indigenous to northeastern North America, not relatively recent migrants. This proposal, known as the *in situ* hypothesis, stimulated researchers to think in terms of a much greater time depth for Iroquoian development, and resulted in the proposal of more complex classification schemes. Thomas E. Lee (1951a, 1952), for example, suggested another stage, Glen Meyer, for the Neutral sequence, placing it before Uren in time (i.e. earlier than Wintemberg's "Archaic" Neutral stage). He renamed the stages of the sequence (earliest to latest: Glen Meyer, Uren, Middleport, and Neutral) and implied that such a chronological systematization could be applied to all of Ontario (T. Lee 1952). Although he continued to employ the M.T.S., he also suggested that evidence of significant continuity in Iroquoian culture rendered this system inadequate (T. Lee 1952:64).

In his Ph.D. dissertation, J. Norman Emerson (1954) proposed an overview of the prehistory of Iroquoian societies in Ontario that employed the M.T.S., but also introduced the concepts of tradition and horizon. These concepts had their genesis among American archaeologists who were unhappy with the rigidity of the M.T.S. To replace it, an integrative taxonomy incorporating all three dimensions of form, space, and time was suggested (see Willey and Phillips 1958). The main categories of this approach are horizon, defined as "a primarily spatial continuity represented by cultural traits and assemblages whose nature and mode of occurrence permit the assumption of a broad and rapid spread" (Willey and Phillips 1958: 33), and tradition, defined as "a (primarily) temporal continuity represented by persistent configurations in single technologies or other systems of related forms" (Willey and Phillips 1958:37). Using the M.T.S. Emerson divided the Ontario "Iroquois Aspect" into the Middleport (western) and Roebuck (eastern) "foci". Going beyond the M.T.S., he argued that the widespread distribution of the Roebuck "focus" made it a horizon (Emerson 1954:239), whereas the more localized nature of, and chronological change within, the western "focus" indicated it was a tradition. He called the latter the Middleport Tradition, in which "... a

culture commencing with Uren and Middleport and ending with Lawson formed a continuity in the southwest peninsular area" (Emerson 1954:243). With this Emerson was recognizing the temporal depth that lent credence to the *in situ* hypothesis, although he did not pursue this explanation of Iroquoian origins in any detail in his thesis.

The *in situ* hypothesis was not tested archaeologically, however, until Richard S. MacNeish conducted a typological study of pottery rim sherds from a number of Iroquoian sites located throughout northeastern North America (MacNeish 1952a). While Wintemberg based his interpretations on data from only five Iroquoian sites located in Ontario, by the time MacNeish conducted his analysis he had access to artifact collections from 17 Ontario Iroquoian sites and 76 Iroquoian sites overall. MacNeish espoused the concept of type proposed by Rouse (1939) and Krieger (1944), and was highly influenced by William Ritchie, with whom he had undertaken a study of the "pre-Iroquoian" (Owasco) pottery of New York State (W. Ritchie and MacNeish 1949). The technique he used was to select certain attributes that he considered to have spatial and chronological significance from the rims of pottery vessels, and combine these attributes to group rim sherds together in types as clusters of objects. The attributes that he selected were the same as those Wintemberg had used in his chronological study: 1) the shape or form of the rim of the vessel, 2) the motif of decoration associated with the rim of the vessel, and 3) the technique of application of the decoration. MacNeish did not attempt to demonstrate quantitatively the independent spatial or chronological significance of the attributes he selected, and his selection and combination of the attributes was intuitive. He then used his types to conduct a frequency seriation of the Iroquoian sites from which he had obtained rim sherd samples.

The results of MacNeish's research strongly supported the *in situ* hypothesis and provided firm archaeological evidence for a much longer period of time of Iroquoian development than had previously been considered. He documented this time-depth by concentrating on regional sequences leading to the historically known Iroquoian groups. As a by-product of this study, he proposed an overall chronological set of stages for Iroquoian development: Point Peninsula (400 B.C.- A.D. 600); Early Owasco (A.D. 600-900); Late Owasco (A.D. 900-1100); Earlier or Transitional Iroquois (A.D. 1100-1350); Prehistoric Iroquois (A.D. 1350- 1500); Late Prehistoric Iroquois (A.D. 1500-1610); and Historic Iroquois (A.D. 1610-1687) (MacNeish 1952a:86: Figure 22). In this, he appears to be the first researcher to attempt to apply chronometric dates to Iroquoian prehistory.

MacNeish virtually ignored the M.T.S. other than to echo the suggestion that Iroquoian culture was Woodland rather than Mississippian (1952a:88). For Iroquoian sites in Ontario, MacNeish referred loosely to three horizons and/or periods: Uren, Middleport and Huron-Neutral (MacNeish 1952a:84-85). He did not define what he meant by horizon, nor did he clearly relate these horizon/periods to the stages listed above. As noted by Pearce (1984:23), the three horizon/periods are essentially the same as Wintemberg's three stages.

MacNeish's study had a number of important effects on the direction of Iroquoian research. It stimulated a concentration on chronology at the expense of research on such concerns as functional aspects, which had been Wintemberg's main interest, and on cultural factors as suggested by W. Taylor (1948) and espoused by Emerson in his Ph.D. thesis (1954). MacNeish introduced chronological seriation and the Americanist typological approach (albeit a rather intuitive version) to Iroquoian archaeology, in contrast to the trait-list and object-oriented approaches of his predecessors (D. Smith 1983, 1987). These effects led in turn to a concentration on pottery (especially vessel rim sherds), the class of Iroquoian artifacts that was argued to be the most amenable to both typological and temporal studies (see Emerson 1956a). Other classes of artifacts and settlement-subsistence data were not considered to be as important.

On a more positive note, the revised orientation also promoted a more rigorous and quantitative set of methods. In work published after his Ph.D. thesis was finished, Emerson introduced a number of refinements. These included an explicit statement of some of the important assumptions underlying the typological approach (Emerson 1961:181-182); use of statistical measures, specifically use of the Robinson-Brainerd coefficient of similarity (Robinson 1951; Brainerd 1951) in order to quantify and more objectively measure the degree of similarity among Iroquoian rim sherd assemblages (Emerson 1956a); and investigation of the variation of individual ceramic attributes in conjunction with the typological method in a more analytical fashion than MacNeish had accomplished. In addition, the great temporal depth implied by the in situ hypothesis stimulated more researchers to investigate a larger number

of Iroquoian sites (e.g. T. Lee 1960; Pendergast 1963, 1964, 1966c; Ridley 1952). With the greater number of components to compare to one another it was possible to recognize significant spatial and chronological variation. This led to some interesting debates, such as the controversy over the prehistoric origins and homeland of the Huron (Emerson 1959, 1961; Ridley 1958b, 1963).

The approach that MacNeish and Emerson developed remained predominant in Ontario until about 1965. The objective of this approach was to produce a viable culture history of Iroquoian prehistory within the framework of the *in situ* hypothesis. The general method consisted of ordering the archaeological record (or, at least, the rim sherds in the archaeological record) through typology. The ceramic classes thus produced were further ordered into cultural units using the low level units of the M.T.S. These cultural units were related to each other chronologically through seriation. The culture history generated was justified by use of the D.H.A. and the theoretical assumption that societies tended to organize themselves into discrete cultural units. As more researchers entered the field of Iroquoian archaeology and more archaeological data became available through survey and excavation, however, it gradually was realized that neither the typological approach as practiced by MacNeish and Emerson nor the M.T.S. did justice to the complexity evident in the archaeological record of Iroquoian prehistory.

The Ontario Iroquoian Tradition and Attributes (1965 - present)

Starting in the early 1960s, several significant methodological and theoretical changes in the approach to Iroquoian studies were suggested and variously implemented, initiating trends that have continued until the present day. To begin with, however, the overall approach of classifying and seriating rim sherds, and organizing cultural units with the objective of producing culture history remained the same. The important modifications occurred in the realm of the analytical and cultural entities that were used to generate culture history. Specifically, the typological method as practiced by MacNeish and Emerson as well as the M.T.S. were criticized and rejected.

The most significant development that occurred during this period is James V. Wright's formulation of a revised framework for Iroquoian archaeology. In *The Ontario Iroquois Tradition*,[2] written in 1964 and published in 1966, Wright applied the tradition-horizon approach (see Willey and Phillips 1958) to Ontario Iroquoian prehistory and produced a synthesis that incorporated previous ideas and important new ones. Although he explicitly rejected the M.T.S. in this study, he retained many of the names and labels for periods and cultures suggested earlier by Wintemberg, T. Lee, Emerson, and MacNeish.

The Ontario Iroquois Tradition included three stages (see Table 8.2): Early, Middle and Late. During the Early Stage, J. Wright argued that southern Ontario was occupied by two "branches": Pickering in southeastern and southcentral Ontario and Glen Meyer in southwestern Ontario -- branches which were equated with distinct ethnic units. The Middle stage began at about A.D. 1300 with the fusion of these two branches caused by the conquest and absorption of Glen Meyer peoples by Pickering intruders. The result of this fusion was the Middle stage, a cultural "horizon" (a broadly distributed and rather homogeneous development), found throughout most of southern Ontario and which lasted only 100 years from A.D. 1300 to 1400 (J. Wright 1966:54). J. Wright divided the Middle stage chronologically into two 50 year substages: Uren and Middleport. He saw the end of the Middle stage occurring after A.D. 1400 with the break up of the cultural horizon into regional groups consisting of the precursors of the Iroquoian tribal units first contacted by Europeans in the sixteenth and seventeenth centuries A.D. The Late Ontario Iroquoian stage consists of two branches that included the historic Iroquoian groups: the Neutral-Erie and the Huron-Petun. The nature of J. Wright's formulation of the Ontario Iroquois Tradition is discussed in some detail by Pearce (1984:27-32) and elsewhere in this volume.

J. Wright's (1966) synthesis had an immediate and extremely important impact on Ontario Iroquoian archaeology. It provided for the first time a coherent and consistent framework for the whole of Iroquoian prehistory and has remained in general use to the present as an organizational tool. Indeed, the following chapters in this volume

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[2] "Iroquois" equates with "Iroquoian" as the latter term is used today (see Footnote 1).

TABLE 8.2: Ontario Iroquois Tradition (after J. Wright 1966).

PERIOD (A.D.)	STAGE DESIGNATION	BRANCHES/SUBSTAGES
1000 - 1300	Early Ontario Iroquois	Pickering (East) Glen Meyer (West)
1300 - 1400	Middle Ontario Iroquois	Uren (1300-1350) Middleport (1350-1400)
1400 - 1650	Late Ontario Iroquois	Huron-Petun (Southcentral) Neutral-Erie (Southwestern)

are organized and presented within J. Wright's three stage format. Much of the archaeological research on Iroquoian societies conducted since 1966 has been concentrated on refining J. Wright's original construct. This has been greatly stimulated by the vastly increased data base of Iroquoian components that have been investigated in the past two decades and the larger number of researchers, too many to list here, who have concentrated on Iroquoian prehistory. Indeed, almost every year, 2 or 3 Iroquoian villages are extensively excavated -- largely through salvage archaeology projects. In the following review of recent work on prehistoric Iroquoian societies, it will be impossible to mention every project that has been conducted or every contribution that has been made. Instead, trends of research and some contentious issues will be examined.

One of the major trends that has occurred is the ever increasing amounts and kinds of data available for prehistoric Iroquoian societies in Ontario. The larger data base is reflected in the number of sites that have been identified for which there is at least some form of data available. This is the result of a number of factors, including the large number of archaeological surveys that have been conducted for both research and contract purposes. Even more important than the numbers of Iroquoian sites is the much expanded nature of the information from them that is now being recovered, analyzed and reported. Instead of limited excavations concentrating on recovery of rim sherd samples, extensive and sometimes complete excavations have been conducted on sites such as Ball (Knight 1978, 1987), Hood (Lennox 1984a), Coulter (Damkjar 1990), Kirche (C. Ramsden 1989), Calvert (Fox 1982c), Elliot (Fox 1986b), Moyer (N. Wagner et al. 1973), Christenson (W.R. Fitzgerald 1982a), Baumann (Stopp 1985), Thorold (Noble 1980), Nodwell (J. Wright 1974), Draper (Finlayson 1985a), LeCaron (Johnston and Jackson 1980), Keffer (Finlayson et al. 1985), Benson (P. Ramsden 1977b, 1988a), and numerous others. Often, improved data recovery techniques such as flotation have been employed in order to recover very fine-scale remains.

The greatly expanded information base resulting from such endeavours has made possible detailed analyses of kinds of data other than the pottery rim sherd focus which has dominated Iroquoian archaeology in the past. For example, important detailed studies have been undertaken of osteological remains (e.g. Anderson 1972; J. Jamieson 1983; Pfeiffer 1986; Saunders and Spence 1986), faunal remains (e.g. Lennox et al. 1986; Prevec and Noble 1983; F. Stewart 1974), floral remains (e.g. Noble 1975a; Fecteau 1985; Sykes 1981), ceramic artifacts other than pottery vessels such as smoking pipes (e.g. Matthews 1980, 1981a, 1981b; Noble 1979), stone artifacts (e.g. Fox 1971, 1979b; S. Jamieson 1979), bone artifacts (e.g. McCullough 1978), and settlement patterns (e.g. Dodd 1984; Finlayson 1985a; Warrick 1984a). In addition, the chronology of Iroquoian prehistory has been greatly refined through the wider application and increased understanding of the vagaries of radiocarbon dating (see especially Timmins 1985; J. Wright 1985). Also, the effects of European introduced goods on indigenous lifestyles and the precise timing of

their introduction has been subjected to intense scrutiny (e.g. Noble 1968; P. Ramsden 1978, 1981). Finally, and following from the seminal work of Noble (1968, 1969), the enhanced data base has created renewed interest in documenting and showing how specific aspects of Iroquoian social-cultural patterns developed through time. For example, Noble (1968) attempted to document the development of historically known Huron burial practices involving the use of ossuary burial and the "Feast of the Dead" (see also Johnston 1979 and Ramsden: this volume). Similarly, several investigators (e.g. Dodd 1984; Noble 1968, 1969; Noble and Kenyon 1972; Warrick 1984a) have attempted to infer when, how and why historically known aspects of Iroquoian society such as matrilineages, clans, village councils, longhouses, warfare, cannabalism, etc. developed.

Because of the abundance of new data, the understanding of prehistoric Iroquoian societies in Ontario has been extended in both time and space. For example, in J. Wright's initial formulation of the Ontario Iroquois Tradition, he saw Iroquoian culture beginning with Glen Meyer in southwestern Ontario and Pickering in southeastern Ontario. Research by Stothers (1977) and others (see Fox: this volume), however, has identified the Princess Point Complex as a transitional stage between non-cultivating Middle Woodland societies and the agricultural Iroquoian societies of the Late Woodland period. In addition, extensive work in eastern Ontario by James F. Pendergast has contributed a sizable body of information concerning St. Lawrence Iroquoian sites (e.g. Pendergast 1972, 1983, 1988). J. Wright did not include St. Lawrence Iroquoian societies (the easternmost manifestation of Iroquoian culture in Ontario; see Jamieson: this volume) within the Ontario Iroquoian Tradition, and the relationship between the two groups has never been completely resolved (see Pendergast 1975, 1985).

At the methodological level, J. Wright introduced a point of controversy about the nature of the analytical units employed for study of Iroquoian pottery. Although the synthesis of the Ontario Iroquois Tradition was based largely on use of MacNeish's series of pottery types, J. Wright suggested that typological analysis be replaced by analysis based upon modes or single attributes of pottery vessels such as a certain kind of rim profile, the presence or absence of neck decoration, the presence or absence of shoulder decoration, and so on (J. Wright 1966:17). The debate over pottery types versus attributes has been discussed in detail by P. Ramsden (1977a) and D. Smith (1983, 1987) and will only be summarized here.

The study of ceramic attributes for constructing cultural historical frameworks can be traced back to Wintemberg's (1931:83-84) qualitative examination of traits of vessel form and decoration to establish his stages of Neutral development. The basis for MacNeish's types was an examination of the same attributes as suggested by Wintemberg, but in a somewhat more systematic manner (MacNeish 1952a:2-7). Emerson (1956a) recommended that attribute analysis supplement typology and shortly thereafter, M. White (1961) published a study of Iroquoian sites in western New York State in which she rejected MacNeish's types on methodological grounds. J. Wright further elaborated on the superiority of attribute analysis over use of MacNeish's types in papers published in 1967 and 1980, and he conducted a practical application of attribute study in his analysis of artifacts from the Nodwell site (1974). Perhaps the most influential test of attribute analysis, however, was P. Ramsden's (1977a) study of pottery from a large number of Iroquoian sites.

Although MacNeish's types continue to be used for general purposes, especially broad-scale seriation, attribute analysis has become much more popular for detailed investigations. This popularity appears to be the result of developing interest in regional variation, special-purpose sites, and more fine-grained chronologies, for which attribute study is undoubtedly more suitable. There has been, however, recent criticism of the manner in which attribute analysis has been employed, especially when directed toward investigation of variation within a construct such as the Middleport substage (see Dodd et al.: this volume). Such variation is best seen, by definition, when variables of attributes are examined systematically and the co-variation of attributes is studied, as Spaulding (1973) recommended. In practice, however, the attribute analysis suggested by J. Wright tended to focus on the frequencies of individual states. In effect, this approach represents a simple replacement of intuitive types with attribute states. Since attribute states were treated methodologically in the same way as the MacNeish's types, there was, in fact, no pervasive change in method. As with the intuitive approach to typology, archaeological significance was ascribed as opposed to being demonstrated (Lennox and Kenyon 1984; D. Smith 1987:46). D. Smith (1983, 1986, 1987) argued that analysis using attribute variables and attribute combinations would be more appropriate than dependence on individual attribute states for detailed studies of specific problems.

Another important trend has been the tendency of researchers to concentrate investigation on regional site clusters and local sequences in attempts to follow the movements of one or more communities over space and through time. This development was sparked by J. Tuck's (1971) influential work of the same nature on the Onondaga Iroquois in New York state but also reflect a growing conviction that detailed work at the local level will provide a more precise picture of the development and functioning of Iroquoian society (see below). A synthetic study of the Middleport period completed by M. Kapches (1981) identified ten regional foci or site clusters in various parts of southern Ontario although she concentrated her research on one of these site clusters in the Markham area of southcentral Ontario. Another concentration of Iroquoian sites which has received considerable attention is in the Crawford Lake area (Finlayson and Byrne 1975; D. Smith 1987). The sites in this locale appear to represent a complex but continuous sequence from Early Ontario Iroquoian times right through to the early historic period, providing a rare opportunity to study the entire development of Iroquoian societies in one area. Pearce (1984) has conducted a study of local sequences in the London - St. Thomas region of southwestern Ontario and identified five communities in that area alone (see also D. Smith 1978; Keron 1986; Poulton 1980). Other clusters and sequences of Iroquoian components have been isolated in the Kitchener-Waterloo area (Horne 1985; R. MacDonald 1986; N. Wagner et al. 1973), the Rouge-Duffins drainage area east of Toronto (Finlayson and Poulton 1979), in the Barrie area (Lennox et al. 1986), in the Trent River valley (P. Ramsden 1977b, 1979, 1988a), and in easternmost Ontario (Pendergast 1966c). For a more detailed discussion of regional clusters see later chapters of this volume.

A final methodological trend that has become increasingly crucial to the understanding of Iroquoian communities, is the greater attention being afforded to a wider range of site types rather than the traditional focus on large villages. In an attempt to get a more thorough, less-biased view of Iroquoian lifestyles, attention has focussed on investigating a wider range of site types, including the excavation of special purpose stations and/or non-village sites such as Robin Hood (Williamson 1983), Little (Williamson 1985 and this volume), Slack-Caswell (S. Jamieson 1979), Windermere, Ronto, Smallman (Pearce 1983), Horner Creek (Lennox 1987a) and Bogle 1 and 2 (Lennox 1984b).

In large part, many of the general tenets of J. Wright's synthesis have withstood the tests of time and the Ontario Iroquoian Tradition has remained in use as an overall organizational framework. However, some of the details of the framework, as well as theoretical assumptions underlying it, have been controversial. This chapter will conclude with a listing of some of the more contentious issues, all of which are taken up to varying degrees in succeeding chapters.

1) a controversial issue concerning J. Wright's original synthesis is related to the nature of, and reasons for, the transition from the Early to the Middle stages of the Ontario Iroquoian Tradition. Specifically there has been a long-standing debate concerning the hypothesis of conquest of Glen Meyer peoples by Pickering peoples. Many individuals have rejected this explanatory construct on both theoretical and substantive grounds (see Pearce 1984; Williamson 1985 and this volume);

2) some individuals have questioned the reality of the Uren substage. William C. Noble (1975c:52) suggested that the Uren site itself is a multi-component station that includes both Glen Meyer and Middleport occupations. In other words, it does not represent a transitional assemblage in time between Glen Meyer and Middleport but simply a "mixed" assemblage of the former and the latter which gave it the appearance of being transitional. While some have used this suggestion to eliminate Uren, others still consider it a viable construct (see Dodd et al.: this volume);

3) there has been much debate and discussion over the age of the Ontario Iroquoian stages and their subdivisions, with many investigators assigning age estimates differing from those of J. Wright (1966). For example, several investigators have wanted to push the beginning of the Early Ontario Iroquois stage back much beyond a suggested A.D. 1000 inception date to as early as A.D. 500-800 (e.g. Kapches 1987:168; Noble 1975c:37). Similarly, some have suggested the Middleport substage began as early as A.D. 1250 and ended as late as A.D. 1450 (e.g. Kapches 1981) rather than the ca. A.D. 1350-1400 suggested by J. Wright (1966). Some of these difficulties have arisen as a product of uncritical treatment of radiocarbon dates but they also reflect the fact that it is often difficult to make arbitrary time/stage distinctions in what is essentially a continuum of development through time;

and 4), while investigators have generally tended to agree with the general stage units of J. Wright's (1966) formulation, the nature of variation within those stages has come under increasing scrutiny. It is argued that "branches" such as Glen Meyer/Pickering or Huron contain considerable variability and that such groups were in reality not homogeneous, well-integrated units. It is suggested that treating these branches as homogeneous units tends to mask considerable variability and, in doing so, tells us little about how these societies functioned and developed. One of the earliest, most explicit and thorough studies which made this point was P. Ramsden's (1977a) study of the Huron. In contrast to earlier writers, P. Ramsden (1977a) argued that the development of the Huron was not through one or two simple lineal sequences of development. Rather it was the result of multi-lineal developments, involving complex population movements, as alliances and other forms of social interaction between local groups waxed and waned to meet varying environmental and socio-political circumstances. P. Ramsden (1977a:24) argued that this approach was more useful in that it actively sought out and attempted to explain variation in the archaeological record. In addition, it was a more realistic model of the development and functioning of Huron society since it corresponds to patterns known to be characteristic of historically known shifting agriculturalists in general – not just the Huron. Subsequent writers have tended to follow P. Ramsden's (1977a) lead, not only for the Huron but for earlier stages of development. For example, this view has: a) reinforced a trend begun earlier to a greater focus on variation through the intensive investigation of developments in local areas; b) led to a questioning of J. Wright's (1966) implicit treatment of branches (essentially an archaeological construct) as being equivalent to real "ethnic units"; and c) led to doubts about whether one can draw clear boundaries between "branches" such as Glen Meyer and Pickering.

Summary and Conclusions

In summary, the above review indicates a number of changes through time in the approaches to the study of Iroquoian archaeology in Ontario. At a substantive level, there has been a vast increase in both the quantity and quality of the information on Iroquoian prehistory available for study. One hundred years ago, David Boyle started with virtually no archaeological data to work with, and although he established a systematically organized collection of artifacts, at no point in his career did he deal with site data or settlement patterns. Between 1910 and 1940, Wintemberg increased the site data base to six Iroquoian villages, and collected settlement data as well as artifacts. By 1950, MacNeish had information from 76 Iroquoian sites (17 of them in Ontario). In the 1960's, J. V. Wright used artifact and settlement data from 56 Iroquoian sites (47 of them in Ontario) as his basis for the formulation of the Ontario Iroquois Tradition. Today, as will be made abundantly clear in the following chapters, there are literally hundreds of Iroquoian sites of all sizes and functions that have been recorded, as well as a much greater variety of data (e.g. more refined chronologies based on advances in radiocarbon dating, detailed settlement plans, floral and faunal analyses, more sophisticated statistical analyses of artifact assemblages).

The accumulation of archaeological data will most likely continue into the future at an accelerated rate, especially with the involvement of an increasing number of researchers involved in contract, mitigative, rescue and salvage projects. The result is a much expanded data base that is, unfortunately, largely fragmented and unavailable for synthetic study. A possible remedy for this is the development of compendia or "data banks" of information that are readily accessible to both contributors and users. Regardless, to take advantage of this flow of information, some means must be found to efficiently disseminate the results of this research.

Techniques for the collection, processing and analysis of data have become increasingly more sophisticated since the inception of archaeology as a systematic pursuit in Ontario. Present trends point toward the development of ways to extract more and better data from the archaeological record with a minimum investment of energy and resources. This development has been stimulated to a great degree by the accelerated destruction of heritage resources by economic development, both industrial and residential, that has occurred since about 1960. One major result has been the development of technological aids, such as power equipment on sites and computers in the laboratory. The challenge in the future is to maintain quality of research in the face of continued destruction and decreasing financial support.

As the quantity and quality of data increased over the past century, the importance of patterns of variation in the archaeological record became clearer. Researchers gradually became more concerned with developing methods of recognizing and describing this variation, and with devising theoretical frameworks to explain it. Changes in methodological approach have been most directly reflected by the nature of the archaeological entities that have been used to investigate patterns of variation. To begin with, the artifact itself was seen as the most elementary analytical entity, largely because workers such as Boyle and Wintemberg assumed that the basic objective of artifact analysis was the ordering of artifacts into classes to which functional significance could be ascribed.

Fairly substantial change in methodological approach occurred in the 1940's and 1950's with the introduction of the typological approach and the *in situ* hypothesis. There was a rather abrupt switch in objective from functional to temporal inference, largely because the *in situ* hypothesis brought an element of greater time depth to Iroquoian archaeology. However, influences from American archaeology of the era also contributed to this temporal focus as American theorists such as Krieger and Rouse focussed attention on finding artifact types useful for arranging archaeological assemblages in time.

The arguments proposed for replacing types with attribute states that emerged in the 1960's did not entail marked methodological changes, but simply a change from one analytical level of analysis to another. J. V. Wright argued that, for purposes of *general* studies of spatial and temporal variation, the typological approach was quite adequate. Since much of the research being conducted in the 1960's and early 1970's remained concerned with culture history, it is not surprising that archaeologists were somewhat reticent to adopt an alternative analytical entity. In reality, attribute states have been employed for the most part, using the same methods and the same purposes as types. In fact, the form of attribute analysis used most often in Ontario is different from that employed by Wintemberg or MacNeish only in the level of quantification used, and the assumptions associated with the typological approach were simply transferred to attribute states.

The trend in methodological approach at present appears to be toward an expansion of attribute analysis to include more categories of data (such as settlement pattern) and toward more sophisticated applications of computer processing and statistical analysis. In addition, some questions about the efficacy of simple attribute analysis have been raised, with the suggestion that the use of attribute variables and attribute combinations be examined. Such refinements will have to be continued in the future if we are to extract as much information as possible from the burgeoning information base.

Changes in explanatory models have been influenced by prevailing approaches such as the migrationary hypotheses of the late nineteenth and early twentieth centuries, the Midwestern Taxonomic System, and the Direct Historical Approach employed in the mid-twentieth century, and the Tradition-Horizon Approach introduced in Ontario in the 1960's. The main theoretical assumptions that Boyle and Wintemberg inherited from the speculative stage remained largely unchanged. They conducted their research under the umbrella of a migration hypothesis they saw no need to question. As a result, the dominant concern was with the functional study of artifacts (e.g. their uses) to the detriment of other research questions.

In contrast to the accompanying methodological changes, the shift in explanatory model that occurred in the 1940's was not as dramatic as it appeared on the surface. The *in situ* hypothesis was, like the migration hypothesis, a means of dealing with culture history, and did not go beyond a concern with space and time. The tribal units that MacNeish used as the historical anchors for his seriations were basically the same as Wintemberg's Iroquoian "foci." The Midwestern Taxonomic system did not suddenly become obsolete but remained influential for some time. There was no real concern with artifact function, social organization or cultural context; these were considered to be controlled through analogy with historically recorded societies (e.g. through the Direct Historical Approach).

Within the past three decades we have seen some fairly major changes in theoretical approach. To begin with, however, the change was minimal, and may be best characterized as a gradual increase in the complexity of assumptions. Both the methodological and theoretical assumptions inherited from previous periods began to come under limited scrutiny only after the arguments of American archaeologists elsewhere concerning the limitations of

culture history, began to filter into Iroquoian research. This development has been reflected in attempts to deal with ecological-economic, social and cultural factors in recent research. While such studies have provided insights into these aspects of Iroquoian societies, many profitable areas of these kinds of research have not yet been fully explored. For example, there have been very few studies of questions as basic as the simple function of Iroquoian pots. Such studies must be, and undoubtedly will be, undertaken in the future.

The predominant system of cultural classification for Iroquoian research since the late 1960's has been the Tradition-Horizon approach as best exemplified by J.V. Wright's Ontario Iroquois Tradition construct. Wright's model has had the great advantage of being not only broadly conceived, but also widely accepted. It has allowed archaeological materials that are distinct in both form and researcher orientation to be included within one over-arching framework. On the other hand, this model suffers the same disadvantages as all such broad synthetic schemes: it has tended to emphasize similarities among archaeological materials rather than differences. A pattern of prehistoric Iroquoian culture has been recognized but variations on that theme have been down-played or over-looked. As more and more data are recovered, it is becoming increasingly apparent that there is important variation within such constructs as the Middleport "Horizon," and the nature and significance of such variation needs to be pursued.

The foregoing historical survey makes it evident that the growth of Iroquoian archaeology over the past 100 years has been quite complex and subject to diverse trends and influences. The challenge of future research is to continue to build upon this historic foundation by learning from its mistakes or overemphases, by developing new and innovative approaches to managing and interpreting our heritage resources, while at the same time confronting problems such as the rapidly disappearing archaeological record of Iroquoian peoples.

CHAPTER 9

THE EARLY IROQUOIAN PERIOD OF SOUTHERN ONTARIO

Ronald F. Williamson

Past Research

Research on the Early Iroquoian period of ca. A.D. 900-1300 developed out of a general study of Late Woodland cultures in southwestern Ontario. Between 1940 and 1951, Thomas Lee (1951a, 1952) located hundreds of previously unknown sites throughout that area and published the results of his extensive survey work through the National Museum of Canada. It was during these years that he recognized and defined the Glen Meyer focus as an Ontario manifestation of the Owasco aspect (the earliest Late Woodland; i.e. settled village-life based on agriculture) originally formulated by William Ritchie in upper New York state (1944). In New York, W. Ritchie had noted stylistic similarities between Owasco ceramic vessels and later Iroquoian ones, as well as close resemblances in other artifact categories, but at the time, he attributed these to culture contact rather than a genetic relationship between Owasco and New York Iroquois (W. Ritchie 1944). At about this time, Richard MacNeish (1952a) published his substantiation of the *in situ* or in place theory of Iroquoian origins, based on his tracing of continuity through time in Iroquoian pottery types. This resulted in the abandonment, by W. Ritchie and others, of earlier hypotheses which explained Iroquoian origins as a result of a recent migration to the area (see D. Smith: this volume). The *in situ* theory became the principal "working hypothesis of the majority of archaeologists in the Iroquois field" (W. Ritchie 1961:32). In a subsequent study of New York state, W. Ritchie (1969:253-312) traced Owasco cultural development from an ancestral Middle Woodland Hunter's Home phase through to the Oak Hill phase of early Iroquois culture. He defined three major developmental phases for Owasco: the formative Carpenter Brook phase (A.D. 1000-1100), the middle Canandaigua phase (A.D. 1100-1200) and the late Castle Creek phase (A.D. 1200-1300).

W. Ritchie also identified the settlement-subsistence pattern of the Owasco period as consisting of camp, hamlet and village components. Camp sites were located on river flats, adjacent to large marshes, or near other pertinent resources, and were interpreted as having been used episodically by fishing, hunting or collecting parties from larger, more permanent settlements. Hamlets resembled village sites in miniature; for example, the Bates site which, at one stage, apparently consisted of a single house surrounded by a palisade. Village sites ranged in size from 0.5 to 1.5 hectares and were located on well-drained soils, often away from major waterways. Such sites were characterized by palisades, houses of varied sizes and shapes, hearth activity, large storage pits and, often, burials (W. Ritchie 1969:272-300). While palisades are normally interpreted as defensive walls, they may have initially functioned as a means by which to express an emerging sense of settlement permanence.

The Owasco period was defined as a time of developing sedentary community life, based primarily on a horticultural economy which involved the growing of corn, squash and beans (W. Ritchie and Funk 1973). W. Ritchie hypothesized an Owasco society "in which the influence of women as the cardinal food producers had resulted in

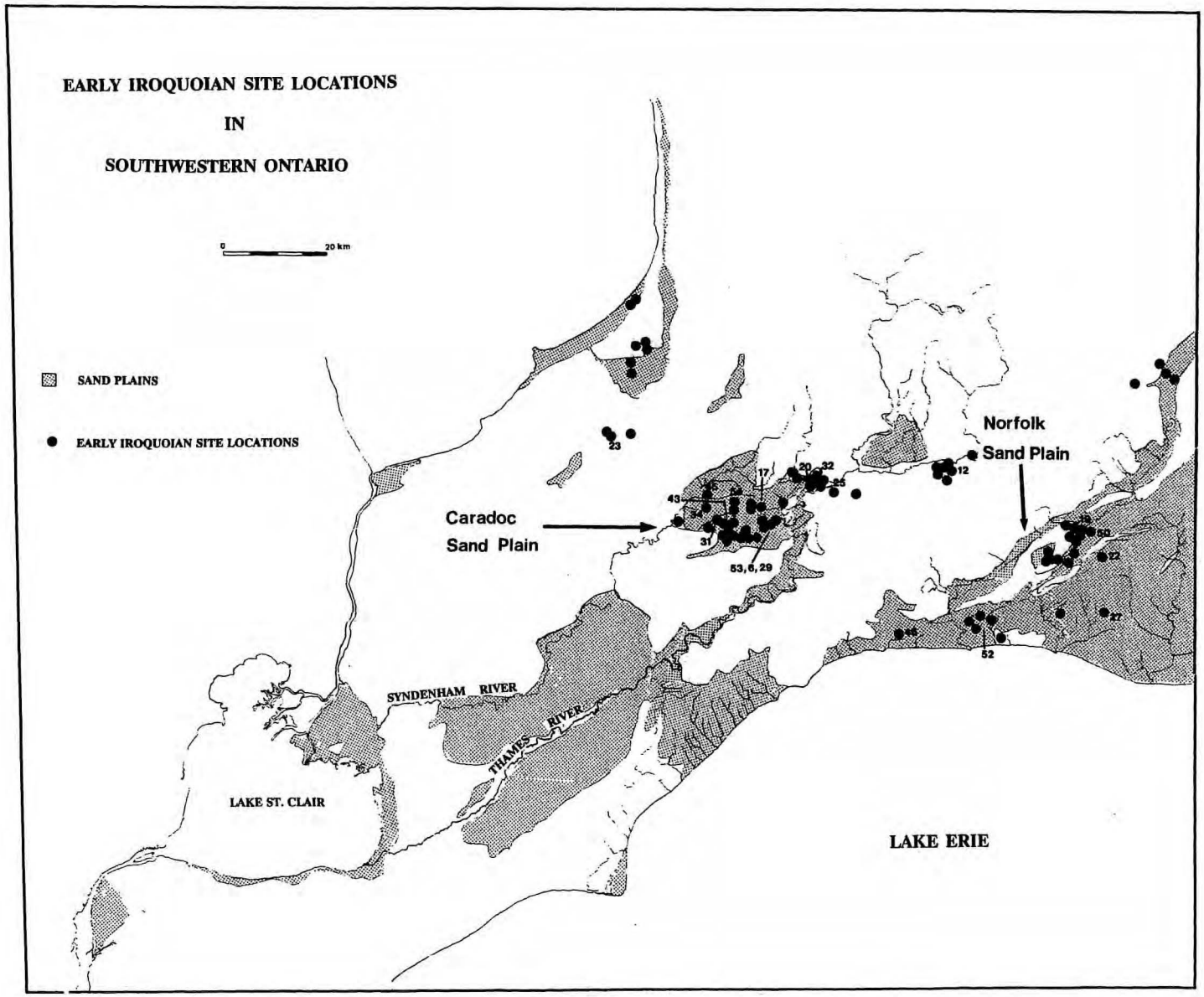
EARLY IROQUOIAN SITE LOCATIONS
IN
SOUTHWESTERN ONTARIO
0
20 km
SAND PLAINS
EARLY IROQUOIAN SITE LOCATIONS
Caradoc
Sand Plain
Norfolk
Sand Plain
SYNDENHAM RIVER
THAMES RIVER
LAKE ST. CLAIR
LAKE ERIE
23
43
31
17
20
32
25
53, 6, 29
12
19
50
22
27
52

FIGURE 9.1: Early Ontario Iroquoian Sites in Southwestern Ontario. Refer to Table 9.1 for site names.

matrilineal descent[1] and, in certain of villages, in matrilocal residence...." (1969:288). More recent interpretations of some Owasco sites suggest multiple season or long-term sporadic occupations, rather than those continuous occupations characteristic of later Iroquoian village life (Trigger 1981b:25).

Following W. Ritchie's (1961, 1969) lead in New York, Ontario researchers attempted to define the continuum of regional Iroquoian development encompassing Thomas Lee's (1952) Glen Meyer formulation. While both T. Lee (1952) and Ridley (1958b) had looked primarily to the New York Owasco to describe and classify sites extending throughout southern Ontario, J. Wright (1966), in his synthetic discussion of the evidence for an *in situ* origin of Ontario Iroquoians, followed the lead of Walter Kenyon (1960, 1968), and defined two regional variants or "branches" for the Early Ontario Iroquoian stage: Glen Meyer in the west and Pickering in the east. He applied the term Pickering to material from the Miller site (W. Kenyon 1960, 1968), the East Sugar Island site (W. Ritchie 1949), the Frank Bay site on Lake Nipissing (Ridley 1954), the Boys and Barrie sites (Ridley 1958b) and the Bennett site (J. Wright and Anderson 1969). He assigned eight sites located in southwestern Ontario (T. Lee 1951a, 1952) including Goessens, Stafford, Woodsmen, Smale, Reid, Too, Faulds, and MiV18 to the Glen Meyer branch (see Figures 9.1 and 9.2). Although he argued certain aspects of the ceramics including vessel form, manufacturing techniques, area of decoration and certain decorative techniques were held in common by both Pickering and Glen Meyer, J. Wright chose to stress differences rather than similarities and pointed to a number of contrasts between the two involving pottery rim decorative techniques and treatment of vessel bodies. Also, contrasts were noted in the presence or absence of certain artifacts in site assemblages and in the size, nature and distribution of settlement types. It was believed that both of these branches shared much in common with contemporaneous phases of Owasco in New York state and that the origin of all three developments could be traced back to the Middle Woodland period in their respective regions of the Lower Great Lakes (J. Wright 1966:94). Nonetheless, both W. Ritchie (1961) and J. Wright (1966) agreed about the existence of two discrete centers for Iroquoian development: one in Ontario and the other in New York.

While J. Wright (1966:40) detected in his southwestern Ontario Glen Meyer data a shift toward later Ontario Iroquoian patterns, he argued that this branch did not lead directly into the subsequent patterns. Instead, there appeared to be a much greater degree of continuity in ceramics between the Late Pickering of southeastern Ontario and subsequent Iroquoian sites across most of southern Ontario. Indeed, it was argued that certain ceramic attributes common previously only on Pickering sites, had appeared suddenly or rather abruptly in southwestern Ontario. Hence, J. Wright (1966) developed the "conquest theory" in which it was argued that Pickering peoples moved into southwestern Ontario conquering and absorbing the Glen Meyer peoples.

J. Wright's (1966) definition of the western Glen Meyer branch rested largely on the basis of his analysis of ceramics, which were collected by Thomas Lee from sites in southwestern Ontario and which now reside in the collections of the Archaeological Survey of Canada. In contrast, the Pickering branch was defined largely on the basis of published reports (W. Ritchie 1949; Ridley 1954, 1958b; W. Kenyon 1960) which, according to J. Wright (1966:23), yielded a considerable amount of settlement pattern data but little detailed analytical data concerning artifact assemblages.

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[1] In a matrilineal society, descent is traced through the female line rather than through the male line (patrilineal). Matrilocal residence patterns are ones in which a couple lives with the wife's relatives after marriage as opposed to patrilocal residence patterns in which the couple resides with the husband's relatives. Matilineality and matrilocality were apparently characteristic of seventeenth century Iroquoian groups (Tooker 1964; Trigger 1978, 1981b:7-8) such that the residents of the classic Iroquoian structure, the longhouse, were a matrilineal extended family, usually consisting of a mother and her daughters together with their husbands and children (see below and Ramsden: this volume).

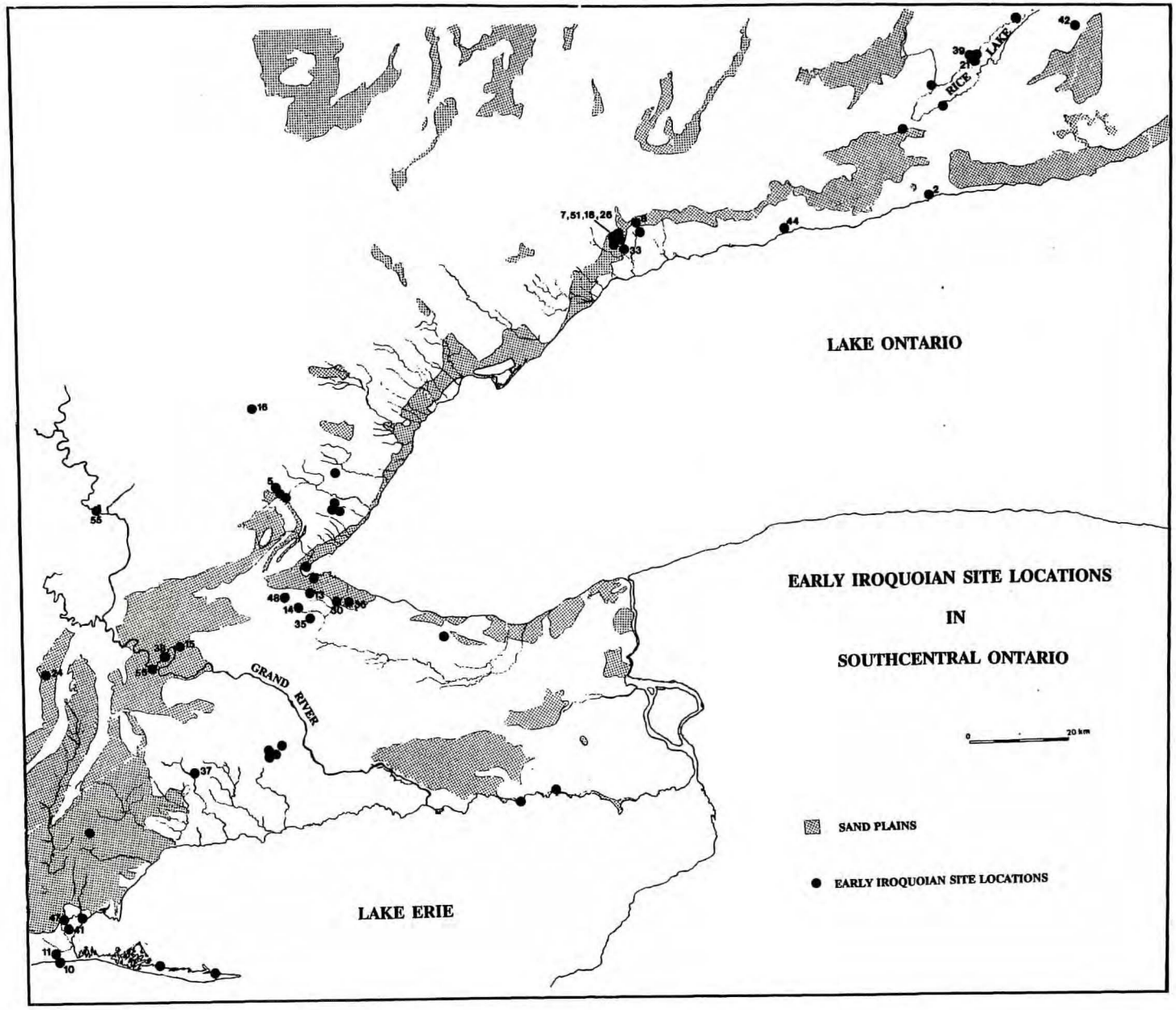
LAKE ONTARIO
RICE LAKE
GRAND RIVER
LAKE ERIE
EARLY IROQUOIAN SITE LOCATIONS
IN
SOUTHCENTRAL ONTARIO
0
20 km
SAND PLAINS
EARLY IROQUOIAN SITE LOCATIONS

FIGURE 9.2: Early Ontario Iroquoian Sites in Southcentral Ontario. Refer to Table 9.1 for site names.

Subsequent researchers have sought to evaluate, refine and where necessary, modify J. Wright's basic model through more detailed examinations of known sites such as Boys (C. Reid 1975a, 1975b), Reid (M. Wright 1978), Uren (M. Wright 1986), Smale and MiV18 (Williamson 1985), and through the archaeological identification and evaluation of new sites including Van Besien (Noble 1975c), DeWaele (Fox 1976), and Elliott (Fox 1986c, 1988) on the Norfolk sand plain bordering the north-central shore of Lake Erie (Figure 9.1), numerous sites on the Caradoc sand plain west of London, Ontario (Williamson 1985, 1986), a number of sites in the Hamilton region (Archaeological Services Inc. 1989), and numerous sites in the Rice Lake (Pearce 1977, 1978c), Durham (Ambrose 1981) and other regions of southeastern Ontario (Kapches 1982, 1987; see Figure 9.2).

Some of these more recent studies have resulted in the development of more refined theoretical frameworks, having gone beyond the primary concern with the reconstruction of culture history, which is evident in earlier works. More specifically, attempts have been made to delimit the social (Noble 1968, 1969; Trigger 1978c, 1981b; Williamson 1985), political (Trigger 1981b; Williamson 1985), settlement (Noble 1975c; Fox 1976, 1982c; Dodd 1984; Warrick 1984a; Williamson 1985, 1986, 1987a), subsistence (Noble 1975a; Fecteau 1985; Williamson 1985, 1986) and ideological (Fox 1986d, 1988; von Gernet and Timmins 1987) spheres of Early Ontario Iroquoian cultural systems. Often these studies have been regionally-framed and have included research designs which involve the complete excavation of villages, the partial and complete excavation of non-village sites and the use of flotation to recover micro-floral and faunal remains.

Despite these new research foci, the traditional concerns of chronology (Fox 1980f; Timmins 1985) and the relationship of sites to preceding and succeeding developments remain (Sutherland 1980; Williamson 1985; Trigger 1985). Many recent studies have abandoned the treatment of archaeological constructs based on constellations of material culture, such as Glen Meyer and Pickering, as social and political realities, in favour of recognizing regionally distinct populations (Sutherland 1980; Pearce 1984; Williamson 1985, 1987b). Indeed, the regional bases of some of these studies have resulted in the documentation of continua of development from the Early Iroquoian period through to later Iroquoian periods in particular local areas (Pearce and Smith 1980). For example, Pearce (1984) has demonstrated clear continuity from the Early Iroquoian through to the Middle Iroquoian occupation of the Caradoc Sand Plain region southwest of London, Ontario. These studies call into question the conquest theory of J. Wright and suggest that the simple division of Early Ontario Iroquoian sites into western Glen Meyer and eastern Pickering branches may be arbitrary and misleading in that it fails to adequately take into account the considerable variability between regional populations in both space and time. Rather than representing discrete branches in western and eastern Ontario, some researchers suggest that they may simply represent two ends of a continuum of spatial variability extending across southern Ontario and that it is no longer advisable to force diverse regionally-based data into broad generalizing cultural-historical constructs (Sutherland 1980; Williamson 1987b). Nevertheless, some of the discussions below are presented in terms of this Pickering/Glen Meyer dichotomy as sites have traditionally been placed within one or the other branches. Also, the fact that some sites are still defined in this manner, suggests that this issue has not yet been completely resolved. Finally, presentation in this manner will serve to give the reader at least some indication of a major characteristic of the Early Iroquoian period in comparison to later times; namely, that there is considerable regional variability in settlement, subsistence and material culture attributes.

Material Culture

Ceramic Vessels

Early Iroquoian vessels are well-made and thin-walled compared to earlier wares and in some cases, later wares. They also tend to be more globular in shape with more rounded bottoms than in earlier times (Figure 9.3), although the earliest Iroquoian vessels are frequently more elongated with conoidal (cone-shaped) bottoms, betraying their development from earlier Princess Point and Princess Point-like vessels (see Fox: Chapter 6). In contrast to

TABLE 9.1: Select Early Ontario Iroquoian Sites in Southern Ontario.

SITE	MAP #[1]	TRADITIONAL ASSIGNMENT	SETTLEMENT TYPE[2]	SIZE[3]	PALISADE	NO. OF HOUSES	INQUIRY[3]	REFERENCES
Allenbrack	-	Pickering	C	--	--	--	S	Pearce 1977
Ault Park	-	Pickering	C	--	--	--	E	Pearce 1977
Auda	2	Pickering	V	0.25	No	10	E	Kapches 1987
Bennett	5	Pickering	V	1.00	2 rows	7	E	J. Wright and Anderson 1969
Berkmotel	6	Glen Meyer	H	<0.50	Yes	4+	E	Williamson 1985, 1986
Bolitho	7	Pickering	V	0.50	--	1+	LE	Ambrose 1981
Boisclair	25	Glen Meyer	?	<0.50	--	No	S	W. Fox: personal communication
Boys	8	Pickering	V	0.50	Yes	2+	LE	Ridley 1958, C. Reid 1975a, 1975b
Breeze	-	Pickering	C	--	--	--	S	J. Wright 1966
Brophy's Point	-	Pickering	F	--	--	--	S	Pearce 1977
Bruce Boyd Lakefront	10	Glen Meyer	C	--	--	--	LE	Fox 1983a
Bruce Boyd	11	Glen Meyer	F,Ce	0.10	--	--	E	Spence et al. 1978, 1981
Calvert	12	Glen Meyer	V	0.50	2+ rows	14	E	Fox 1982c
Chedoke Falls	13	Glen Meyer	V	>0.50	--	--	S	Archaeological Services Inc. 1989
Clish	14	Glen Meyer	H	<0.50	Yes	1	E	Williamson 1987a
Cooper	15	Glen Meyer	H	<0.50	--	2	LE	Fox 1980f
Crawford	16	Glen Meyer	?	--	--	2+	LE	Jury 1948, Pearce 1984
Crowfield	17	Glen Meyer	C	<0.10	No	No	E	Williamson 1985, 1986
DeLancey	18	Pickering	V	--	--	--	S	Ambrose 1981
DeWaele	19	Glen Meyer	V	0.80	2-3 rows	4+	LE	Fox 1976
Dunn	20	Glen Meyer	?	<0.50	--	--	S	Pearce 1984
East Sugar Island	21	Pickering	C	--	--	--	LE	W. Ritchie 1949, Pearce 1977
Elliot	22	Glen Meyer	V	<0.50	Yes	24	E	Fox 1986b, 1988
Faulds	23	Glen Meyer	?	--	--	--	S	T. Lee 1951a, 1952 J. Wright 1966
Force	24	Glen Meyer	V,B	--	--	1+	LE	W. Fox: personal communication
Frank Bay	-	Pickering	C	--	--	--	LE	Ridley 1954
Ginger	26	Pickering	V	--	--	--	S	Ambrose 1981
Goessens	27	Glen Meyer	?	--	Yes	--	LE	J. Wright 1966
Ireland	-	Pickering	V	0.40	Yes	5	E.	G. Warrick: pers. comm.
Ivory Hill	54	Glen Meyer	C	<0.10	No	No	LE	Williamson 1985
King's Forest Park	30	Glen Meyer	H	0.50	No	2+	LE	Fox 1967

Table 9.1 (Continued).

SITE	MAP #[1]	TRADITIONAL ASSIGNMENT	SETTLEMENT TYPE[2]	SIZE[3]	PALISADE	NO. OF HOUSES	INQUIRY[3]	REFERENCES
Kingston Outer Station	--	Pickering	F	--	--	--	S	Pearce 1977
Kelly	29	Glen Meyer	H	<0.50	Yes	1	E	Williamson 1985, 1986
Lightfoot	--	Pickering	?	--	--	--	S	J. Jamieson: pers. communication
Little (Welke)	31	Glen Meyer	D	<0.10	No	No	E	Williamson 1985, 1986
Magrath	32	Glen Meyer	C	<0.10	No	No	E	Pearce 1984
Miller	33	Pickering	V	0.50	Yes	6+	E	W. Kenyon 1968
MiV18	34	Glen Meyer	V	1.30	--	1+	S	J. Wright 1966, Williamson 1985
Moyer Flats	55	Glen Meyer	C	<0.50	No	--	S	Fox 1986g
Pergantile	36	Glen Meyer	V	>0.50	--	8	S	W. Fox: personal communication
Plum Point	--	Pickering	C	--	--	--	S	Pearce 1977
Porteous	38	Glen Meyer	V	>0.50	2 rows	2+	LE	Noble and Kenyon 1972
Redner	--	Pickering	C	--	--	--	S	Pearce 1977
Reid	41	Glen Meyer	F,B	--	--	--	E	M. Wright 1978
Richardson	42	Pickering	V	>0.50	Yes	2+	LE	Pearce 1977, 1978
Roeland	43	Glen Meyer	V,B	1.50	2+ rows	4+	E	Williamson 1985
Serpent Mounds	39	Pickering	C,O	--	--	--	E	Johnston 1979
Short	44	Pickering	C	--	--	--	S	Ridley 1958, Donaldson 1962, Bridges 1972, Finlayson 1977
Slack-Caswell	37	Glen Meyer	Q	--	No	--	LE	S. Jamieson 1977
Smale	45	Glen Meyer	V	--	--	--	S	J. Wright 1966
Stafford	46	Glen Meyer	V	--	--	--	S	J. Wright 1966
Stratford Flats	56	Glen Meyer	C	<0.50	--	--	S	Fox 1982f
Tara	-	Pickering	V,B	<0.50	2 rows	5+	E	G. Warrick: pers. comm.
Too	47	Glen Meyer	?	--	--	--	S	J. Wright 1966
Van Besien	50	Glen Meyer	V	>0.50	2 rows	5+	E	Noble 1975c
Wade	48	Glen Meyer	C	0.20	No	1	E	Archaeological Services Inc. 1989
Washburn	--	Pickering	C	--	--	--	S	Ridley 1958b
Winnifred	51	Pickering	V	0.50	--	--	S	Ambrose 1981
Woodsmen	52	Glen Meyer	?	--	--	--	S	J. Wright 1966
Yaworski	53	Glen Meyer	H	<0.50	Yes	3+	E	Williamson 1985, 1986

1: refers to numbers of sites on Figures 9.1 and 9.2.

2: C: campsite; F: fishing camp; O: ossuary; Q: stone quarry; Ce: cemetery; B: burials; D: deer surround; H: hamlet; V: village.

3: site sizes are in hectares.

4: E: excavated; LE: limited excavations; S: surface examination/test-pitting.

earlier times where vessels were made by coiling or by building up the vessel using a relatively thin rope of clay, Early Iroquoian vessels are made largely by "modelling" in which the potter begins with a large lump of clay rather than a thin coil and models this lump into the vessel shape. Vessel rim form is normally collarless (i.e. there is not the abrupt juncture between the rim and neck seen on later vessels such as those of the Huron; see Figure 11.2), although vessels from later, thirteenth century sites, are often characterized by "incipient" or slight collar development (e.g. Figure 9.4a). Their orientation is usually vertical to outflaring in side view and castellations,[2] where present (<10%), are not well-defined but are of the simple rounded or simple pointed "incipient" varieties (e.g. Figures 9.4a,d,e,f, 9.5d).

Most vessels are decorated, often on both the exterior and interior rim regions as well as on the exterior necks and lips. Although variability in both motif and technique is the hallmark of Early Iroquoian ceramics, the most common exterior rim motif consists of bands of oblique lines (Figure 9.4a,b,d). The most frequently employed techniques used to produce these lines are linear-stamping in the west, and dentate stamping in the east, although cord-wrapped stick impressions are more prevalent in early assemblages while "incising" (simply drawing the design on the pot with a pointed implement) occurs more frequently in later assemblages. Also common in some assemblages are techniques such as crescent-shaped stamping and "push-pull." In the latter technique, a stylus is pulled over the surface in one direction but at intervals is pushed slightly into the clay in the opposite direction. Hatched and horizontal motifs increase in frequency through time and vary in placement until they culminate in the classic styles of the Middle Iroquoian period.

Punctation, most often employed as secondary decoration, occurs on both interior and sometimes exterior vessel surfaces, often with a raised node or "boss" accompanying the punctate on the opposite surface of the vessel (Figures 9.4a,c,d; 9.5b,c,d,f). While the frequencies and locations of punctates and bosses were initially thought to be of chronological significance (J. Wright 1966:54; J. Wright and Anderson 1969:69; Noble 1975c:15-17; C. Reid 1975a:45), more recent studies have questioned their usefulness in that regard (M. Wright 1986:42). Indeed, the analysis of the ceramic assemblages of two neighbouring and contemporaneous Early Iroquoian communities in southwestern Ontario, has led to the conclusion that, at least in the case of those two communities, the frequency of occurrence of exterior versus interior punctation, and the frequency of occurrence and nature of neck decoration, reflects spatial variability at one point in time rather than temporal placement (Williamson 1985:289-290). Nevertheless, the use of techniques such as punctation, as well as the dentate stamping and cord-wrapped stick impressions on these vessels suggest continuity from preceding Princess Point ceramics.

The frequencies of various vessel body surface treatments were also thought to be of use for both "seriating" or arranging sites in time, as well as for differentiating between branch affiliation (J. Wright 1966; Noble 1975c). Smoothed-over cord, ribbed paddle and checked stamp surface treatments occur on Early Iroquoian vessels.[3] While smoothed-over cord and plain treatments predominate on southwestern Ontario sites (Noble 1975c:21; Williamson 1985:287), ribbed paddle treatment predominates on southcentral sites and is essentially absent from southwestern-most Ontario. On the other hand, 23% of the bodies from the Wade site, a small campsite in Hamilton, Ontario (Archaeological Services Incorporated 1989), have smoothed-over ribbed paddle surface treatments, suggesting differences are not as clear as they were once thought to be. Moreover, while there is a substantial presence of cord-

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[2] Castellations are upward projections on the vessel rim that are characteristic of Late Woodland pottery.

[3] During the process of making the pottery vessel, the potter models the vessel into shape and ensures its integrity by striking the surface with a wooden paddle. Often this involves holding a stone or other object (an anvil) on the vessel interior wall to support it, and then striking the exterior surface with the flat face of the paddle. In order to minimize the paddle sticking to the wet clay, the paddle surface can be treated in various ways. Ribbed paddles are ones on which a series of parallel grooves have been carved on the paddle surface while "check-stamped" paddles have squarish raised areas on their surface. Another means of treating the paddles is to wrap them in cord/string or fabric. This leaves a surface appearance often referred to as "cord-malleated." All of these treatments produce distinct impressions on the clay surface although the impressions were often partially ("smoothed-over") or completely removed by the potter during subsequent manufacturing operations.

malleated and corded stick treatments on vessels from tenth and eleventh century sites in both regions, scarification,[4] thought to be a Glen Meyer treatment, is common on Norfolk Sand Plain sites near the central north shore of Lake Erie but rare on Caradoc Sand Plain sites west of London, Ontario (Williamson 1985:287).

Pipes

Although pipes were initially considered rare on Early Iroquoian sites (J. Wright 1966:32), they are now considered common although they certainly do not occur to the extent that they do on subsequent Middle Iroquoian sites. They are normally crude with stems meeting bowls at obtuse angles although occasional right-angled elbow forms also occur (e.g. Figure 9.5a). The stems are plain (e.g. undecorated) and often exhibit flattened surfaces or "faceting." Barrel-shaped to cylindrical bowl forms predominate (e.g. Figures 9.5a, 9.6c). The majority of pipes are undecorated but items with punctates (Figure 9.6b,d,f) and more rarely, incised ring decoration (Figure 9.5a), are present in most collections. Five sites have yielded effigy pipes including a "medallion human face" effigy on a stem recovered at the DeWaele site, a snake effigy found at the Calvert site (Fox 1982c), a human effigy found at the Bolitho site (Ambrose 1981), a quadruped clay effigy piece from the Elliott site (Fox 1986c), and a turkey effigy found at the Kings Forest Park site (Figure 9.6a; Fox 1967).

Ceramic Gaming Discs

Circular ceramic pieces, often made by grinding a pottery vessel body fragment into shape, are common on most Iroquoian sites and are believed to be gaming discs. In Early Ontario Iroquoian times these appeared initially to be limited to Pickering sites (J. Wright 1966:53) but they have now been found on several Glen Meyer sites (Noble 1975c; Fox 1976; Williamson 1985).

Chipped Lithics

Early Iroquoian lithics are characterized by triangular-shaped and, often, basally concave projectile points with downward projecting corners or spurs (Noble 1975c; Fox 1982b; see Figure 9.4g-i). More rarely, long, thin, side-notched points are reported (Fox 1982g). Generally, the triangular points are smaller than the typical Levanna points associated with earlier sites.

Strong amorphous flake scraper industries and many combination, crescent, spokeshave and classic Glen Meyer stemmed snub-nose scrapers (Noble 1975c; Figure 9.4j,k) are well represented in most regional collections (Noble 1975c; Williamson 1985). Stemmed strike-a-lights have also been recognized as typically Early Iroquoian (Fox 1976; M. Wright 1986).

Bone, Antler, Shell and Copper Artifacts

While bone awls, bone beads and miscellaneous fragments of worked shell and bone are found on Early Iroquoian sites, worked bone assemblages remain poorly known, compared to later Iroquoian sites. This rarity may be due to the acidity of sandy soils or simply a limited range of tools.

There is, however, an indication of significant antler utilization at the Elliott site (William Fox: personal communication) and at the Van Besien site in that thirty-six percent of the worked bone assemblage consisted of antler artifact fragments (Noble 1975c). On the other hand, there was a significant abandonment of unused antlers at the Calvert site (William Fox: personal communication).

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[4] A process in which the potter drags or slashes an implement or paddle edge over the vessel surface in a random and rough manner so as to leave marks resembling scars.

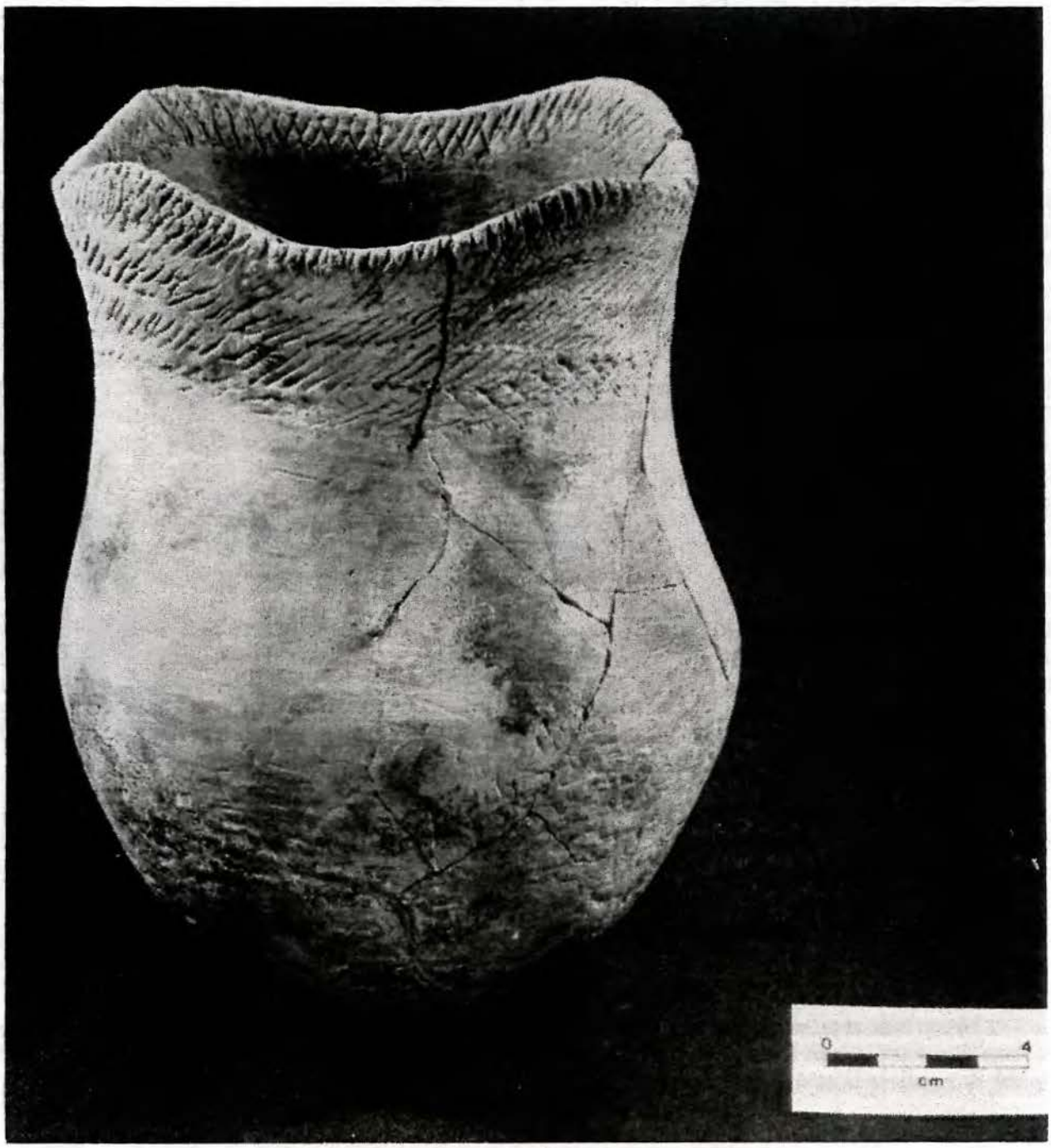

FIGURE 9.3: Early Ontario Iroquoian Glen Meyer Pottery Vessel from the Berkmortel Site. Courtesy of the Longwoods Road Conservation Area.

Marginella shells were recovered at the Yaworski site (Williamson 1985) and at the Elliott site (Fox 1988) as well as copper beads at the DeWaele site (Fox 1976) and the Yaworski site (Williamson 1985) indicating at least modest participation in long-distance trade networks.

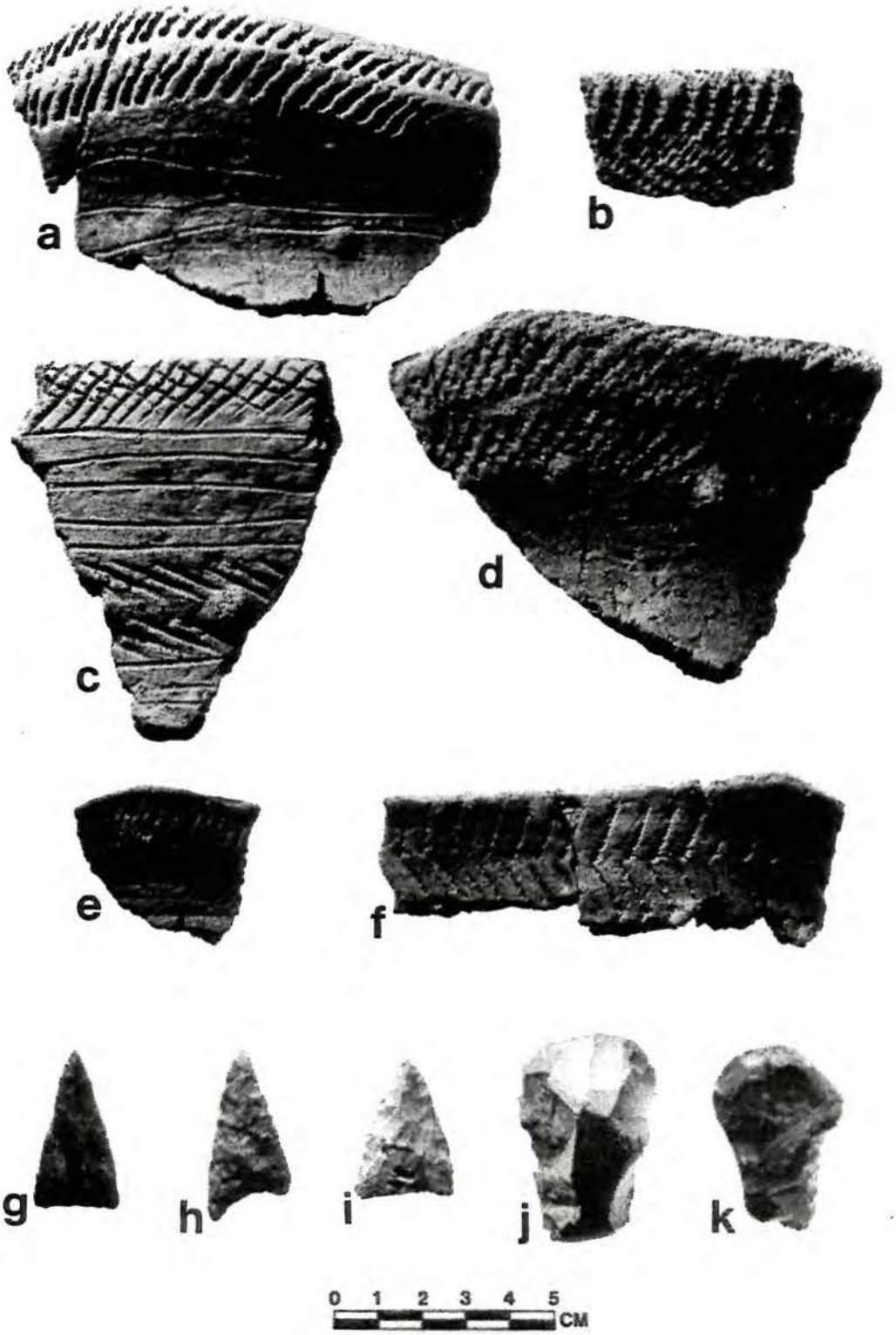

FIGURE 9.4: Glen Meyer Pottery Vessel Rim Segments and Stone Tools. A-F: Rim Segments; G-I: Stone Projectile Points; J,K: Stemmed End Scrapers.

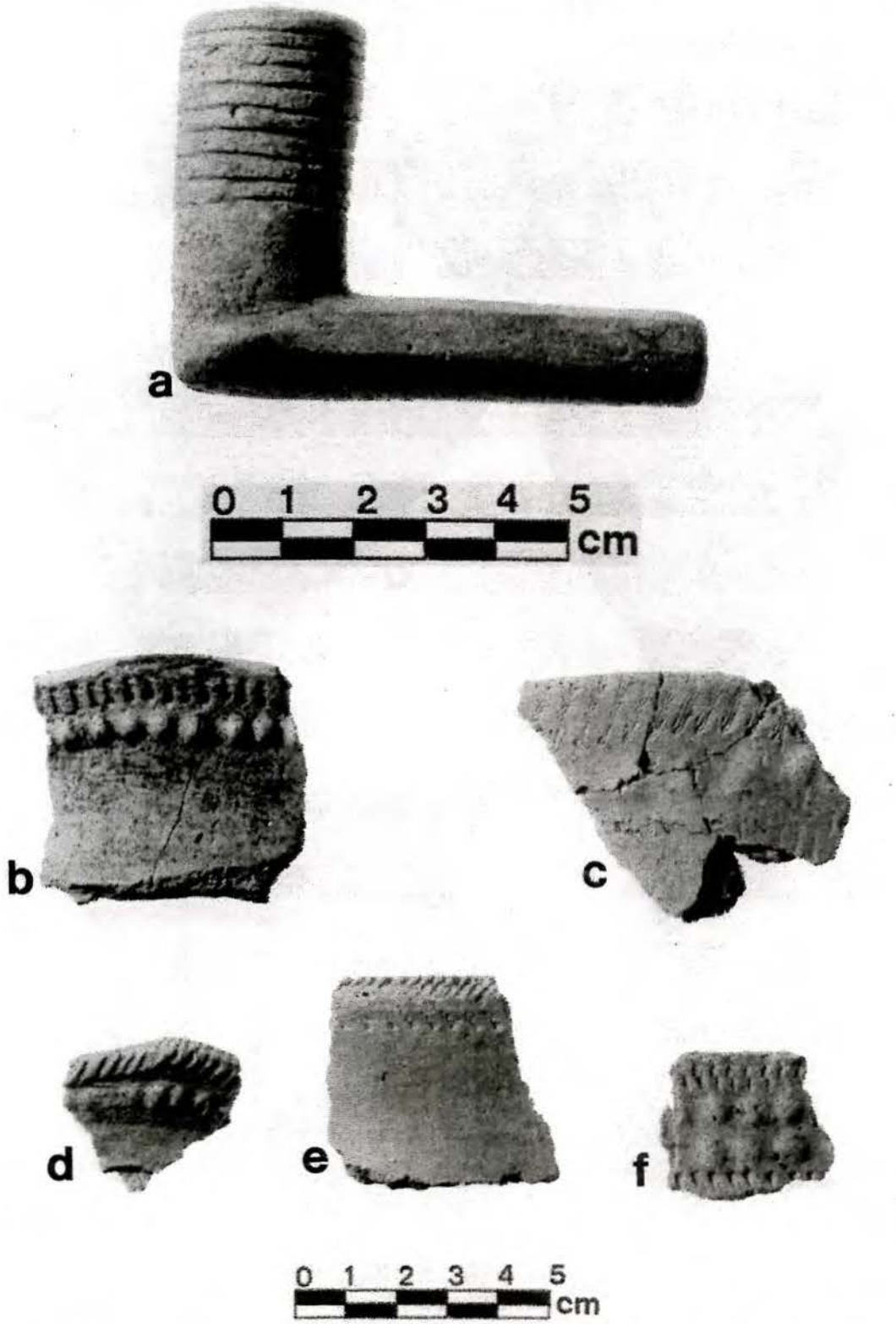

FIGURE 9.5: Ceramic Artifacts from the Auda Pickering Site. A: Right-angled elbow pipe; B-F: Vessel Rims. Courtesy of Dr. Mima Kapches and the Royal Ontario Museum, Toronto, Ontario.

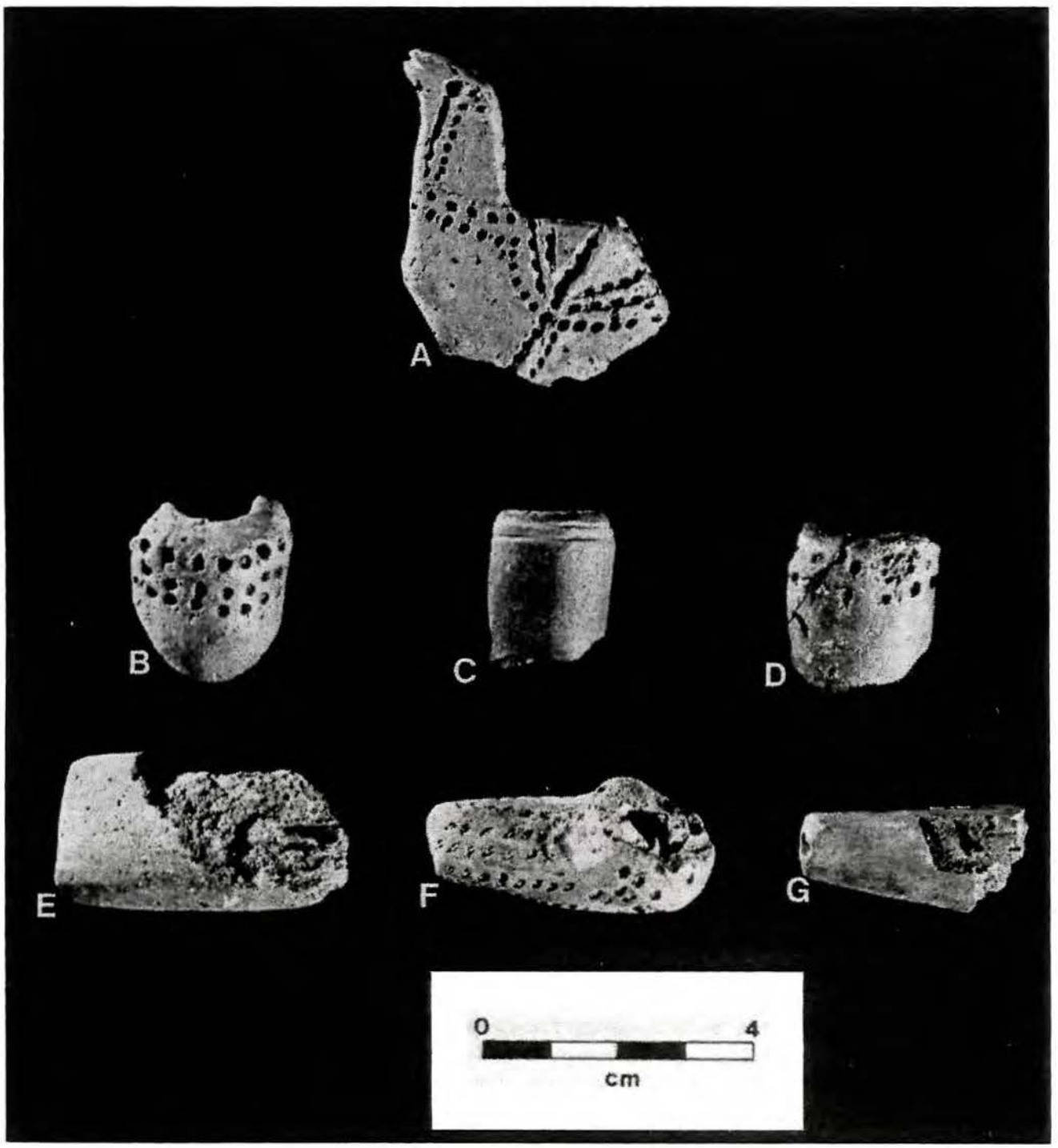

FIGURE 9.6: Glen Meyer Pipe Fragments. A-D: bowls; E-G: stems.

Distribution

J. Wright (1966:23) initially defined Glen Meyer territory as encompassing a portion of southwestern Ontario extending from Long Point on the north shore of Lake Erie to the southeastern shore of Lake Huron thereby including the Norfolk and Caradoc sand plains. Noble (1975c) detected signs of Glen Meyer throughout most of southwestern Ontario, but he located its "primary centre" in Oxford and Norfolk counties. Indeed, the extent of the Early Iroquoian occupation of the Norfolk Sand Plain was not fully understood until a survey of East Elgin County was completed by Dana Poulton in the late 1970s (Poulton 1980). Poulton's data indicated that if all of the Norfolk river drainages were examined to the same degree as the lower Catfish, Big or Big Otter Creeks, the number of known sites would increase dramatically.

Numerous Early Iroquoian sites have also been documented in the southeastern Huron basin, particularly in the Ausable area (T. Lee 1951a, 1952; Deller et al. 1986). The Faulds site, for example, was originally documented by T. Lee and was used by J. Wright in his analysis and definition of the Glen Meyer branch, despite the recovery there of relatively crude ceramic vessels compared to those of other regional Early Iroquoian populations (Deller et al. 1986:11). Late Glen Meyer or Early Middle Iroquoian sites are also present in the region as attested to by the excavation of the Crawford site by Wilfred Jury (1948b).

Finally, based on Fox's work at the contemporaneous Dymock sites (Fox 1982b), it would appear that, in the eleventh century, the Ekfrid Clay Plain southwest of London, Ontario marked the western frontier of Ontario Early Iroquoian occupation. The Caradoc Sand Plain population of the modern Strathroy-Mt. Brydges area, therefore, represented the most westerly Iroquoian regional occupation.

The Pickering territory was thought to be much larger encompassing all of the region north of Lake Ontario to Georgian Bay and Lake Nipissing. Indeed, Kapches (1982:15) has noted several regional populations, in addition to the western Lake Ontario and Rice Lake (Pearce 1977, 1978c) ones, with riverine or lacustrine and sandy soil orientations including those of Duffin Creek, the Bowmanville-Port Hope area, Prince Edward County, and the St. Lawrence/Jefferson County, New York state region. These regional clusters of Pickering sites seem to be separated by large distances, although intensive survey along various other river valleys in areas of sandy soils should yield evidence of additional regional populations. That other sites are not documented or associated with the sands along the north shore of Lake Ontario in the area of Toronto and immediately west is almost certainly a result of lost data due to modern land development practices, although the Early Iroquoian Hill site was recently documented in suburban Metropolitan Toronto (Kapches 1990). Nevertheless, there is significantly richer data concerning the Glen Meyer regional variants during the Early Iroquoian period because of a much greater quantity of research conducted in the last two decades in a part of the province which has been less affected by massive development than areas such as Metropolitan Toronto.

Settlement

Houses

According to Dodd (1984:289) there are few significant differences between Pickering and Glen Meyer house structures although they appear to increase in dimensions through time. Indeed, Kapches (1982) has described early Pickering houses as small and elliptical with hearths situated off centre, whereas later structures are thought to resemble standard Iroquoian longhouses. Glen Meyer houses were also small and elliptical in early times (e.g. Figure 9.7).

While Early Ontario Iroquoian houses appear to become larger, longer and wider through time with increasingly standardized internal refinements, great variation in house plans has been noted in the case of sites where more than one house was excavated. There is also significant variability in the interior house density of both posts and features depending on the settlement type and season of occupation.

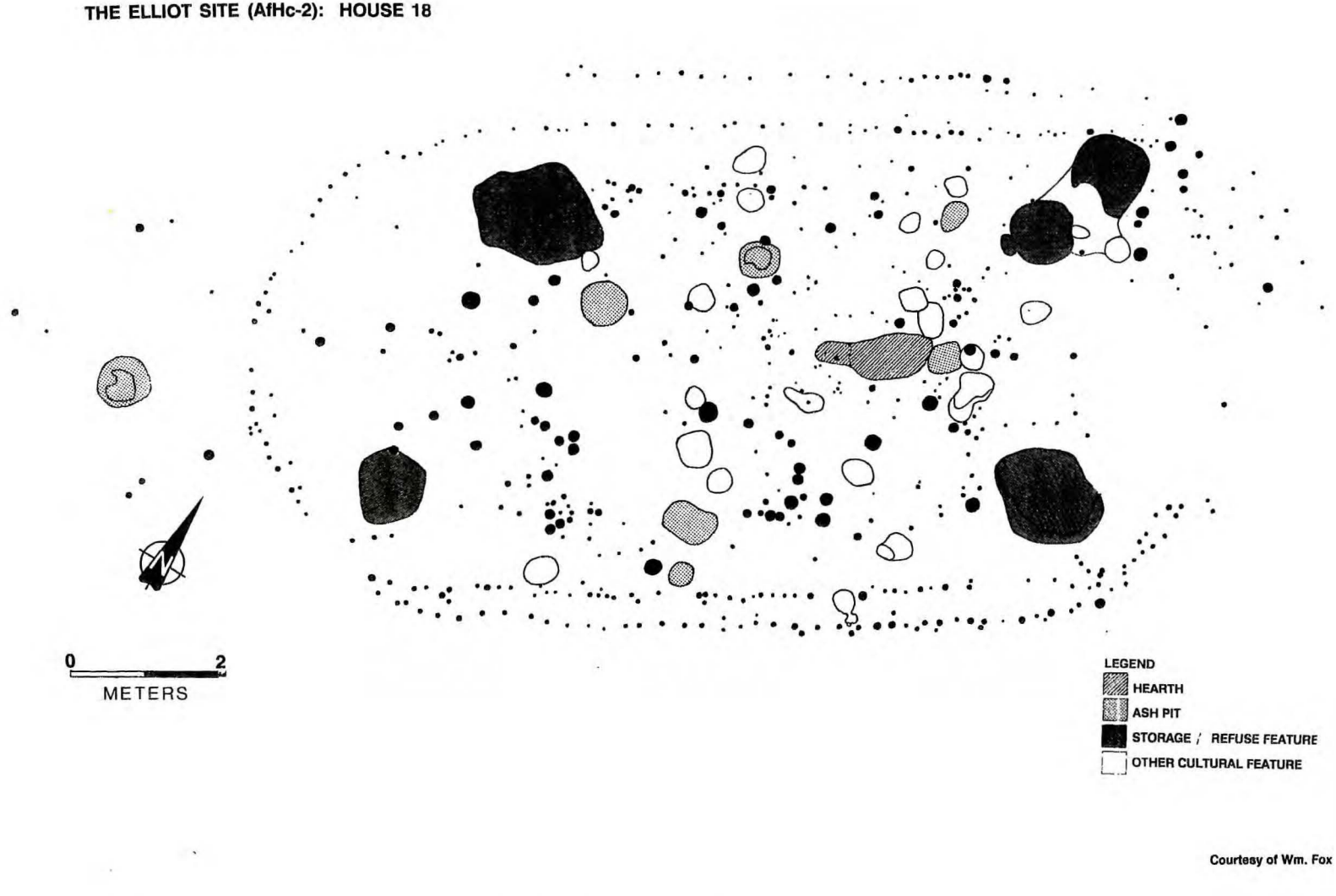

FIGURE 9.7: Glen Meyer Longhouse from the Elliot Site. Courtesy of William A. Fox.

Community Pattern

Early Iroquoian villages are generally small in size (under one hectare), palisaded with one or two often rebuilt rows, and have the appearance of disorganization on account of the presence of several randomly-oriented, superimposed house structures (Warrick 1984a:54-61; see Figure 9.8). The apparent autonomous, unplanned nature of these communities (Trigger 1976, 1981b; Warrick 1984a; Williamson 1985) is thought to reflect an absence of formal village government and clans, weakly-developed matrilineages and low population densities (Noble 1968; Trigger 1981b; Williamson 1985). Moreover, low post and feature densities inside houses and a high incidence of overlapping structures may indicate numerous rebuilding episodes and imply, at some sites, short term multiple occupations over a relatively long period of time, perhaps only during the winter months (Fox 1982c; Warrick 1984a; Williamson 1985).

Kapches (1982) has also noted changes in Pickering village settlement patterns from those villages such as Auda and Miller, which are thought to date earlier in the sequence. These changes include an increase in the number of houses in the village, the appearance of middens or formalized garbage disposal areas/dumps later in the sequence and the later addition of palisades or defensive walls around villages.

It has long been noted that Early Iroquoians appear to have preferred sandy soils for sighting their base settlements, around which corn was likely grown (J. Wright 1966). While certainly reflecting to some degree archaeological survey bias, Figures 9.1 and 9.2 illustrate some correlation between large tracts of sand in southern Ontario and the location of Early Iroquoian sites. This association with sandier soils, but not necessarily sand plains *per se*, seems to be also characteristic of subsequent Middle Ontario Iroquoian villages (Dodd et al.: this volume).

Subsistence

While Fecteau (1985:126-150) has argued that small samples of corn have been recovered from Early Iroquoian sites in his early stage (A.D. 600 to A.D. 1000), and that the next phase of his agricultural period (A.D. 1000 to A.D. 1300) sees an increase in the number of corn-yielding sites and the quantity of corn recovered, it is not really until the fourteenth century or in post-Early Iroquoian times that intensive use of cultigens is evident. On the other hand, by the end of the twelfth century, the full range of cultigens known to have been grown in historic times are found on Early Iroquoian sites. In addition to corn, these cultigens include squash, bean, sunflower and the non-subsistence cultigen, tobacco.

Detailed examinations of settlement patterns at the house, community and regional levels have also contributed to our understanding of Early Iroquoian subsistence behaviour (Kapches 1982; Williamson 1985). While these data are discussed in detail below, the presence and nature of resource-extraction camps suggest that Early Iroquoians continued to rely heavily on naturally-occurring food resources.

Burials

Early Iroquoian burial practices and the evolution of ossuary burial have been reviewed by Johnston (1979) and M. Wright (1986). In general, the burial patterns of this period are poorly understood.

Pickering branch sites such as Miller and Serpent Mounds (Johnston 1979) appear to have early forms of ossuary burial in which a number of individuals previously interred or maintained elsewhere were subsequently reinterred in a jumbled mass in a single communal pit (see Dodd et al. and Ramsden: this volume). However, isolated bundle and flexed burials have also been discovered at village sites (W. Kenyon 1968; J. Wright and Anderson 1969). Recently, four burial features were investigated at the Tara site near Burlington, Ontario (Gary Warrick: personal communication). While it was evident that the individuals in two of the features had been largely exhumed in prehistoric times for reburial elsewhere, one feature contained a flexed adult and another contained the bundled remains of at least five individuals.

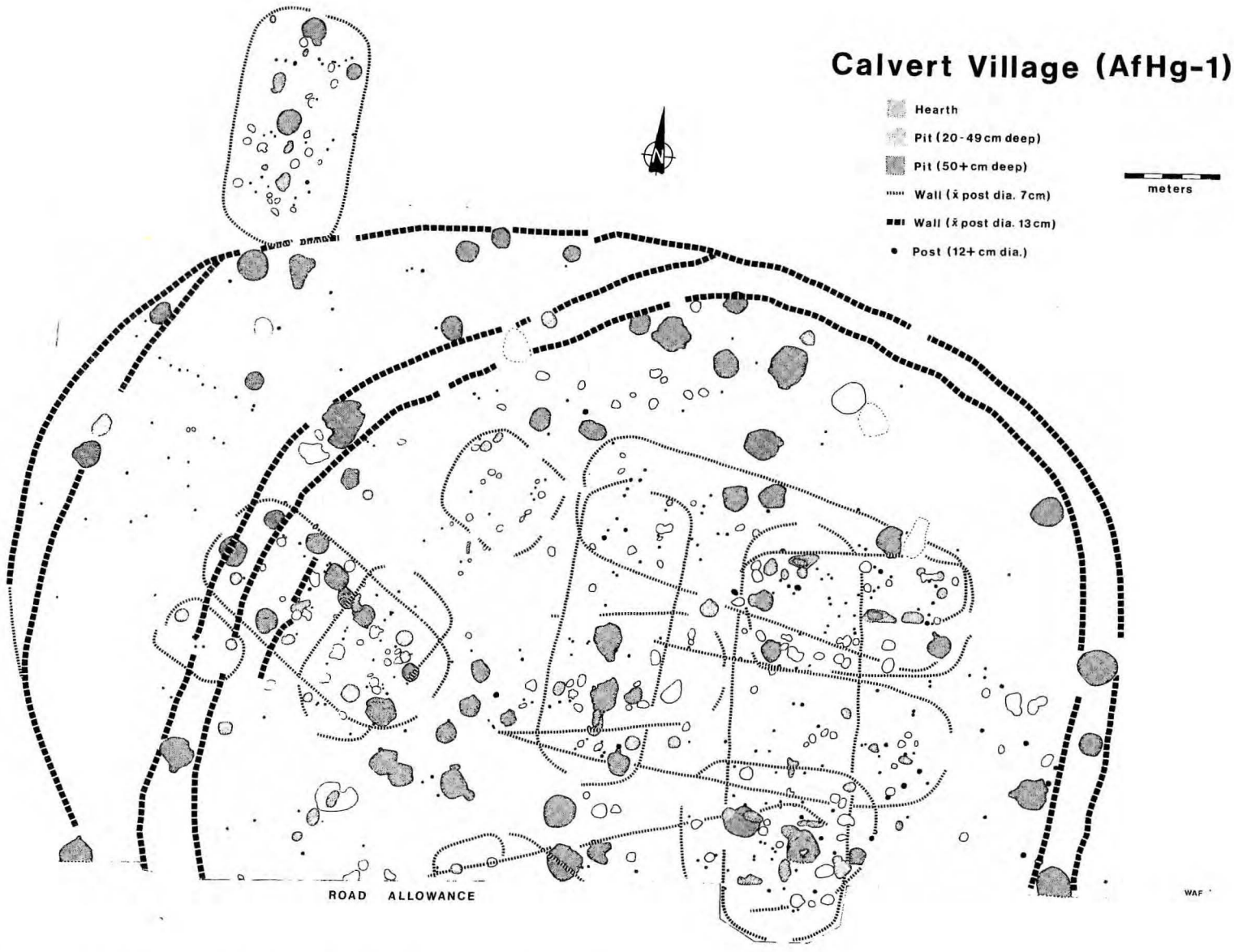

FIGURE 9.8: Map of the Calvert Site Showing Overlapping House Structures.

Alternatively, Saunders and MacKenzie-Ward (1988) suggest that the burials recovered at the nearby Reid site were primary ones and were unlikely to have been transported to the site after primary and temporary treatment elsewhere.

The Force site, excavated in 1977, dates to the late Early Iroquoian period. Two features were encountered which yielded human remains, one of which contained eight individuals. The thirteenth century Roeland site yielded the remains of a single flexed adult within one of the house structures (Williamson 1985) while the Stafford site reportedly yielded the bundle burial of a single individual (T. Lee 1952).

Chronology

Table 9.2 includes uncalibrated and calibrated radiocarbon dates for those Early Iroquoian sites for which data are available. J. Wright's (1966) original estimate for the duration of the Early Iroquoian period was A.D. 1000 to A.D. 1300. However, several researchers rejected dates that fell within this range in favour of earlier ones (e.g. Noble 1975c; Kapches 1982). Noble (1975c) claimed for example, that Glen Meyer could be traced back through the earlier Porteous site (A.D. 830 ± 75, Timmins 1985:70) to the Princess Point Complex. Indeed, excavations at the Porteous site have yielded evidence of complete longhouses which had undergone structural repair and which displayed internal feature alignments (Noble and Kenyon 1972:30). The site is now believed to be either an early Glen Meyer one (Fox 1982f and this volume) or transitional between Princess Point and Early Iroquoian (J. MacDonald 1986). Also, Kapches (1982) would favour a termination date for eastern Early Iroquoian variants of approximately A.D. 1250 based on estimated dates for Middle Iroquoian manifestations in the Markham region, but she acknowledges that the transition to the Middle Iroquoian period might have occurred at different times during the thirteenth century among regional populations.

Alternatively, Fox (1980f), using an A.D. 800 to A.D. 1300 range for Glen Meyer, argued for the acceptance of the absolute dates from Pickering sites rather than the relative estimates based largely on the kinds of ceramics recovered, and noted that such a sequence of sites would correspond well with J. Wright's original age estimates. Moreover, Fox noted that, in light of the concomitant appearance and florescence of horizontal motifs on ceramics from sites across the Northeast in the thirteenth and fourteenth centuries, the Pickering site ceramic assemblages correlated well with the absolute radiocarbon dates. M. Wright (1986:66) has noted that Fox's interpretations, which are now accepted by several other researchers (Sutherland 1980:35; Timmins 1985:83-92; Williamson 1987b:14-16), call into question the assertion that the Pickering branch is the wellspring for the horizontal motif which later dominates the assemblages of Ontario Middle Iroquoian sites. By extension, the greater ties between Pickering and subsequent sites which were used to support the "conquest hypothesis" can be called into question (see below).

Timmins (1985:89-92) similarly noted problems with the Pickering sequence because of the difficulties encountered in interpreting single radiocarbon dates from sites and the uncertainties in employing locally distinct ceramic traditions from a number of regional populations in a unified seriation. Nevertheless, he argued that the existing data do not support an extension of the Pickering period earlier than A.D. 850. Timmins (1985:78-83) also argued that, when critically analysed, the Glen Meyer sequence falls largely after A.D. 1000 with only a few sites indicating a Glen Meyer presence as early as A.D. 800. He concluded that the two sequences are roughly coterminous, although Trigger (1985:84), in evaluating both Middle and Early Iroquoian dates, argued these dates "strongly suggest that the initial manifestations of Early Iroquoian culture appeared in southwestern Ontario," perhaps because "it was ecologically more favourable for horticulture than either upper New York State or the area north of Lake Ontario."

Overall, and at the present time, it is difficult to resolve completely the age range of Early Iroquoian period sites. While most researchers seem to agree on a ca. A.D. 1250-1300 termination date (see also Dodd et al: this volume), the time of its inception is more controversial. However, accepting the prime validity of the radiocarbon dates, with few exceptions (e.g. Richardson, Porteous; see Table 9.2) the vast majority of the dates fall after A.D. 900. Moreover, even the few earlier dates overlap A.D. 900 at one standard deviation and thus, these sites could

ERRATA

Much to our chagrin, but perhaps to be expected in a volume of this scope put together by two amateur "type-setters", an error occurs on page 308 in this volume in which an uncorrected older version of the page was inadvertently submitted to the printer. The bottom paragraph on this page (last 5 lines) should be omitted and the following should be inserted at the top of the page prior to: "Alternatively, Saunders....".

Insert:

Similarly, a number of forms of burial have been documented on Glen Meyer sites. The Bruce Boyd Site near Lake Erie (Spence et al. 1978), is a multi-component cemetery which yielded evidence of Glen Meyer Fishing activities and at least three burials which have been assigned to the Early Iroquoian period (Spence et al. 1981). These burials attest to a form of burial at spring-summer fishing camps, at least in the Norfolk region, whereby primary treatment of the bodies may have involved above-ground interment prior to secondary interment in below ground pits (Spence 1988). Alternatively,...

We sincerely apologize for this error.

TABLE 9.2: Radiocarbon Dates for Early Iroquoian Sites in Southern Ontario.

SITE	B.P. DATE	CALIBRATED DATE (A.D.)*	REFERENCE
Auda	1095 ± 110	905 ± 125	Kapches 1982, 1987
Bennett	690 ± 100 670 ± 100	1315 ± 50 (2)	J. Wright & Anderson 1969
Boisclair	950 ± 80	1070 ± 90	Timmins 1985
Boys	975 ± 120	1060 ± 90	Ridley 1958, C. Reid 1975a
Bruce Boyd Lakefront	720 ± 75	1290 ± 55	Timmins 1985 Fox 1983a
Bruce Boyd	860 ± 65 900 ± 60	1150 ± 55 1135 ± 55	Spence et al. 1978 Spence et al. 1981 Timmins 1985
Calvert	860 ± 80 900 ± 80 820 ± 80 800 ± 80 740 ± 75	1160 ± 75 1090 ± 90 1165 ± 45 (3)	Fox 1982c Timmins 1985
Cooper	955 ± 80	1265 ± 30 (3)	Fox 1980a, Timmins 1985
DeWaele	900 ± 90 855 ± 55	1140 ± 55	Fox 1976
Elliot	890 ± 80 820 ± 80 750 ± 80 1100 ± 80	1050 ± 90 to 1205 ± 75 (not averaged)	Fox 1986b, 1988 Timmins 1985
Five Acre Field	730 ± 100	1280 ± 60	Timmins 1985
Force	715 ± 75 705 ± 75	1285 ± 90 (2)	Fox 1978 Timmins 1985
Gunby	565 ± 80 665 ± 135	1335 ± 45 (2)	Rozel 1979 Timmins 1985
Ivory Hill	790 ± 80	1190 ± 75	Timmins 1985
Kelly	850 ± 80 790 ± 80	1205 ± 35 (2)	Williamson 1985, 1986 Timmins 1985

Table 9.2 (continued).

SITE	B.P. DATE	CALIBRATED DATE (A.D.)*	REFERENCE
Miller	835 ± 70	1160 ± 55	W. Kenyon 1968
Porteous	1125 ± 100	830 ± 75 (2)	Noble and Kenyon 1972
	1200 ± 100		Stothers 1977
Reid	715 ± 80	1340 ± 35	M. Wright 1978, 1986
Richardson	645 ± 80	850 ± 105	Pearce 1977
Roeland	700 ± 80	1280 ± 30 (2)	Williamson 1985
	750 ± 80		Timmins 1985
Slack-Caswell	630 ± 60	1335 ± 35	S. Jamieson 1977, Timmins 1985
Stafford	730 ± 100	1280 ± 60	J. Wright 1966, Timmins 1985
Stratford Flats	1050 ± 90	945 ± 165	Timmins 1985
Van Besien	1005 ± 90	1050 ± 65 (2)	Noble 1975a
	1010 ± 90		
Selkirk No. 5	1000 ± 70	910 ± 65 (2)	Timmins 1985
	1210 ± 55		Stothers 1977
Yaworski	830 ± 80	1150 ± 55 (2)	Williamson 1985, 1986
	890 ± 80		Timmins 1985

*Calibrations follow Klein et al. 1982 and are averaged following the logic and method of Timmins 1985. Some clearly aberrant dates are omitted. Figures in brackets indicate the number of dates averaged.

It is, therefore, difficult to resolve completely the age range of Early Iroquoian period sites. While most researchers seem to agree on a ca. A.D. 1250-1300 termination date (see also Dodd et al: this volume), the time of its inception is more controversial. However, accepting the prime validity of the radiocarbon dates, with few exceptions (e.g. Richardson, Porteous; see Table 9.2) the vast majority of the dates fall after A.D. 900. Moreover, even the few earlier dates overlap A.D. 900 at one standard deviation and thus, these sites could easily indicate a post-A.D. 900 age (see Timmins 1985:86). Thus, a ca. A.D. 900 inception date appears most reasonable with present evidence and this estimate is consistent with Fox's (this volume) terminal date of A.D. 900 for the preceding Princess Point.

Conquest Theory

J. Wright (1966) initially employed primarily ceramic evidence to support his conquest hypothesis. The underlying assumption was that varying frequencies of attributes, that is varieties of body treatment or the frequency of techniques such as linear stamping observed on the ceramic assemblages of sites thought to be roughly contemporaneous, reflected cultural identity.

In his 1969 analysis of the Bennett site, J. Wright expanded upon the ceramic evidence for the conquest and claimed that the Bennett site (J. Wright and Anderson 1969) represented an excellent example of a Pickering village immediately prior to the inferred conquest. He based this assumption on uncalibrated dates from Bennett of 670 ± 100 B.P. and 690 ± 100 B.P., the average of which calibrates to A.D. 1315 ± 50. He also claimed that the Middle Iroquoian Uren site represented the end product of the conquest, while Goessens represented an earlier, yet unscathed Glen Meyer site (J. Wright and Anderson 1969). J. Wright argued that the demonstrated ceramic relationships between these three sites, with respect to attributes and attribute clusters, should reflect the inferred events and therefore, document the proposed conquest and subsequent assimilation. With respect to exterior rim sherd decorative techniques for example, he argued that, because cord-wrapped stick and stafford (crescent) stamp were absent from Bennett and push-pull and drag stamp were absent from Goessens, but all four were represented at Uren, a "fusion" of Pickering and Glen Meyer had certainly occurred (J. Wright and Anderson 1969:65). Nonetheless, the closest ties were between the Pickering Bennett site and Uren rather than between the Glen Meyer Goessens site and Uren. For instance, the Pickering derived trait of push-pull was very common at Uren whereas the Glen Meyer derived cord-wrapped stick, although present, was very rare at Uren. Qualitatively and quantitatively the Uren site decorative techniques supported the conquest hypothesis. Similar arguments were made for rim sherd motif, especially with the use of horizontals and bands of obliques. Still other presence/absence arguments were made for other artifacts from the site assemblages.

However, the main underlying assumptions remained that ceramic attributes necessarily reflect cultural identity, with the presumption of some chronological control. More importantly, it was also assumed that socio-political dominance is normally demonstrated by increasing frequencies of traits belonging to the invading group, a notion for which there is also contradictory cross-cultural evidence. Ian Hodder (1978:4-9) has noted that sometimes vessel shapes and design motifs remain the same for the conquered people despite significant acculturation; invaders might intrude upon settled populations and their arrival may not be identifiable in ceramic patterns for a number of centuries. Also, William Engelbrecht (1974) experienced difficulties in verifying the League of the Iroquois in New York state, using ceramic evidence, since similarity between ceramic assemblages within the League was not greater than that noted between assemblages inside and outside of the League.

While the reaction of the Ontario archaeological community to J. Wright's conquest hypothesis has always been cautious, if not rejective (M. White 1971; Noble 1969, 1975b; Trigger 1976, 1985; Fox 1976; Sutherland 1980; Pearce and Smith 1980; M. Wright 1982, 1986; M. Cooper 1983; Pearce 1984; Warrick 1984a; Williamson 1985, 1987b), J. Wright (1987b) and other researchers (e.g. Kapches 1982; Finlayson et al. 1989) continue to support the hypothesis. Most have not accepted the idea of a conquest because there is no direct evidence of large scale military operations or disruptions in the archaeological record of southwestern Ontario (M. White 1971; Trigger 1985:86), nor is there any evidence that Early Iroquoian regional populations had any kind of pan-regional cultural or political organization necessary to carry out such a conquest.

Moreover, even by the early seventies, Fox (1976) was arguing for an *in situ* Early to Middle Iroquoian transition in southwestern Ontario. There seemed to be a great degree of continuity through time in local areas across the ca. A.D. 1300 transition to Middle Ontario Iroquoian sites in that part of the province. At the same time, there was no evidence of a sudden, discontinuous, influx of Pickering-like attributes which the conquest hypothesis suggested. This continuum of development through time has now been documented in at least three, and perhaps five, local sequences in the London area (Pearce and Smith 1980; Pearce 1984). Indeed, an important development has been the replacement of a unilinear cultural model where groups in all areas follow one line of development, with one of multilinear or multi-lined evolution of various contemporary communities in different areas. The new model

rejects terms such as "Branch" or "Tradition" and cautions against confusing "cultures," defined on the basis of artifact distributions, especially pottery vessel types, in time and space, with socio-political concepts such as tribes or ethnic units (Pearce 1984; see also Hodder 1978; Renfrew 1973, 1978). This perspective only evolved, however, as a result of the accumulation of a considerable amount of new archaeological data from regionally-framed surveys and excavations. Unfortunately, our understanding of Early Iroquoian western and eastern variants have not advanced at equal rates. Nevertheless, it should not seem surprising that neighbouring groups appear to be more similar than those geographically separated by the southern extent of the province.

While there is no doubt that components dating to the Middle Iroquoian developmental period, characterized by a fairly homogenous material culture throughout southern Ontario, developed directly out of regional expressions of earlier Iroquoian culture, an alternative to the conquest theory is necessary to explain the transition. Bruce Trigger (1976:141) has argued tentatively that once the evolution of Ontario social structure reached a saddlepoint between a declining patrilocal residence pattern presumed to be characteristic of earlier groups, and an increasing matrilocal one, there may have been a brief period during which both male and female cultural items were widely distributed throughout southern Ontario, transcending earlier cultural barriers. Population and territorial expansion would augment the process. Other explanations have been offered for the overall trend toward cultural homogeneity, including centralized resource exploitation and alliance formation for trade and warfare (Hayden 1979; M. Wright 1979). There is some evidence in the London area that at least two Early Iroquoian populations came together to form the three to four hectare Edwards site, perhaps as a response to growing commitments to horticulture and village life, and to political pressure originating from the non-Iroquoian populations (see Murphy and Ferris: this volume) living in the extreme southwestern portion of the province at that time (Pearce 1984). Indeed, where analyses of ceramics have failed to provide the data necessary for clearly differentiating the intermediate stages of this transition, careful examination of the socio-political implications of settlement pattern data may reveal certain hallmarks in the evolutionary sequences toward later Iroquoian village life.

Settlement-Subsistence Systems and Societal Change

Introduction

It is only during the last fifteen years that Iroquoian researchers in Ontario have adopted either a regional perspective (Fox 1976; Finlayson and Poulton 1977; Pearce and Smith 1980) or one that addresses the problem of functional variability among sites (Tripp 1978; J. Wright 1972; S. Jamieson 1979; Williamson 1983a). Elements of both must be combined for an adequate study of a regional settlement-subsistence system.

Previously, research in Ontario has tended to focus on villages as the basis for inferring settlement-subsistence systems (Noble 1975a). This focus led to the view that the appearance of villages indicated a fully sedentary existence and formal village life, and that by noting the presence or absence of one site type, the researcher not only could identify the cultural period, but also understand the general settlement-subsistence system to which it belonged. However, it is becoming quite clear that a focus on villages has resulted in a highly biased view of Early Iroquoian settlement-subsistence. Careful attention to the excavation of non-village sites (Williamson 1985, 1986, 1987a; Archaeological Services Inc. 1989) has elucidated a more complex picture of the subsistence base, and in particular, the evolving role of horticulture during the Early Iroquoian period.

Researchers initially described the transition from the Middle Woodland hunting and gathering pattern to the Iroquoian horticultural one as rapid and essentially complete by Glen Meyer times (J. Wright 1966; Noble 1975a; Stothers 1977). Yet recent analyses of skeletal and dental remains from Ontario archaeological sites, although provisional, have indicated a gradual rather than a rapid increase in the utilization of maize between A.D. 400 and A.D. 1200 (Schwarz et al. 1985). These data also suggest that Early Iroquoian populations still relied, to a considerable degree, on naturally-occurring food resources (Katzenberg 1984; Patterson 1984). The adoption of corn would therefore appear to have been gradual and characterized by ecological conservatism. When horticulture was first practised, the risk of crop failure may have been great and simple caution may explain the reluctance of Early Iroquoians to engage in full-scale farming (Bronson 1977:34). As long as the size of population aggregates remained rel-

atively small, the natural productiveness of some Early Iroquoian micro-environments seems to have encouraged a tendency to reduce risk factors by continuing to rely partially on naturally-occurring resources.

Therefore, in this manner Early Iroquoians sought greater security through a mixed economy. There was no need to change more rapidly until socio-political factors forced some of the dramatic settlement pattern changes witnessed in Middle Ontario Iroquoian times and later (Trigger 1981b:32ff; Dodd et al.: this volume). These later changes, which created larger population aggregations, as well as perhaps overall increases in population, would have been important factors encouraging a greater reliance on cultigens. Yet, such developments were only possible because of the significant role that corn and other cultigens had already assumed in the Early Iroquoian subsistence pattern. An adequate study of regional settlement-subsistence systems then must also involve a careful examination of the relationships between people and their environments. A simple description of the natural setting is too narrow and imprecise for understanding cultural process. Accordingly, the usefulness of the biotic zone or province (Dice 1943; see Karrow and Warner: this volume) as an analytic tool for archaeological investigations of Early Iroquoian populations has been found to be rather limited. Not only have recent studies (Williamson 1985) focused on micro-environmental analyses, but the distributional clusterings of Early Iroquoian sites throughout all of southern Ontario and upper New York state would suggest adaptations to smaller areas of sand and sand loams or to physiographic regions within the larger biotic zones which support varying densities of fauna and flora. Their distributions are best understood in terms of regional and micro-environmental analysis.

However, few studies have yet been conducted from a sufficiently detailed ecological or regional perspective to create a data base adequate for reconstructing Early Iroquoian settlement-subsistence systems in Ontario. Our traditional notions of Early Iroquoian economic strategies are, for the most part, derived from W. Ritchie's (1969) identification of the Owasco settlement-subsistence pattern as consisting of camp, hamlet and village components. Nevertheless, more recent studies of both Pickering (Pearce 1978c; Kapches 1982) and Glen Meyer (Noble 1975c; Fox 1976; Williamson 1985) populations have documented a considerable degree of regional variability in settlement-subsistence systems. These are discussed below in terms of the traditional Pickering/Glen Meyer dichotomy in order to give the reader a more complete idea of the nature of the variation present.

Pickering

Although few Pickering sites have been extensively investigated, two main site types have been documented, the village and the fishing camp (Kapches 1982). Most of these small fishing sites are situated along lakeshores or the banks of streams and rivers. Among these are Frank Bay (Ridley 1954), Washburn (Ridley 1958b), Short (Donaldson 1962d; Bridges 1972; Finlayson 1977), Bristow (Sweetman 1967), Walswear (Dear 1971) and Jackson's Point Rockshelter (Morrison 1977). Also, Pearce (1977) described twelve components on Rice Lake in addition to a number of other sites in southeastern Ontario including the Allenbrack, Redner, Kingston Outer Station, Brophy's Point, Ault Park and Plum Point sites. Pickering fishing campsites have also been found in the Sandbanks and Outlet Provincial Parks on Lake Ontario. According to Kapches (1982:8), the majority of these are multicomponent, having been used as fishing camps from Middle Woodland to Late Iroquoian times. They are located throughout eastern Ontario, in particular along the lakes of the Trent River system and along the north shore of Lake Ontario from the Bowmanville-Port Hope region eastward to the St. Lawrence Islands.

Kapches (1982) has hypothesized that, while maize was recovered from all of the excavated Pickering villages, the practice of horticulture by early Pickering populations was limited. It was suggested that the seasonal round consisted of a spring move to fishing campsites; summer planting and tending of the fields along with continued fishing, hunting and gathering; fishing and gathering in the fall; and return to the village in the winter. With the exception of the winter months, Kapches argued that the village was not the focus of activities. Indeed, she postulated (1982:9) that annual fishing and hunting patterns, established during the preceding Middle Woodland period, continued "relatively unaltered" during the Early Iroquoian period until an increased reliance on horticulture brought about a shift in the settlement focus to the village. Unfortunately, no large scale regional excavation programme has yet been instituted to test these hypotheses.

Glen Meyer

William Noble (1975a, 1975c) was one of the first researchers to publish a comprehensive statement concerning Glen Meyer settlement-subsistence patterns. In 1971 and 1972, Noble conducted excavations at the Van Besien site, located in Oxford County north of Lake Erie on the Norfolk Sand Plain. His excavations revealed evidence of complex settlement patterns involving at least two community expansions or occupations. By combining data from the DeWaele site, a mid-twelfth century village excavated by Fox (1976) in the late 1960s, with that from the Van Besien site and from regional archaeological surveys, it was possible for Fox (1976) and Noble (1975c) to describe the Norfolk regional settlement pattern as consisting of small, seasonally-occupied fishing stations, located along the north shore of Lake Erie, together with larger palisaded villages, situated inland on tributaries of the major Norfolk waterways. Noble (1975c:46) also noted that hunting and gathering were important subsistence activities and that white-tailed deer was hunted extensively. Unfortunately, more detailed settlement-subsistence data are not available for the Norfolk region.

William Fox has excavated two other major Glen Meyer villages which have shed light on Early Iroquoian settlement-subsistence systems. The excavation of the Calvert site (Figure 9.8) has significantly increased our awareness of the complexity involved in interpreting settlement-subsistence patterns and ceramic sequences of the Early Iroquoian period. In a preliminary analysis, Fox (1982c) documented several successive occupations at Calvert which may have involved complete rebuilding of house structures (Peter Timmins: personal communication), and which may have entailed a change in site function from base settlement to deer hunting camp. Also, on the basis of five calibrated radiocarbon dates, it would appear that the site was occupied throughout the twelfth and early thirteenth centuries. The Elliott site is another complex, salvage excavated, village (Fox 1982c, 1986c). Excavations revealed evidence of at least two distinct occupations with twenty-four house structures which range in length from five to fifteen metres (e.g. Figure 9.7).

To date, the most extensive examination of an Early Iroquoian settlement-subsistence system was conducted by Williamson (1985, 1986). Williamson's study on the Caradoc Sand Plain just west of London, Ontario involved both archaeological survey and excavation, and resulted in the documentation of twenty-five Glen Meyer sites. Five of those were villages or base settlements and twenty were seasonally-occupied hamlets which served varying functions. Excavations conducted at the Roeland village site revealed evidence of unplanned long-term occupation and at least eight overlapping houses which vary in size and internal arrangement. Data concerning features which are situated in, or adjacent to, the double palisade, which enclosed an area of 1.5 hectares, indicated many large, abandoned storage pits which were filled with ceramic and faunal refuse. In contrast, excavations at the Yaworski, Berkmortel and Kelly (Figure 9.9) sites, all less than 0.5 ha in size, suggest that they were occupied seasonally and had been used in the fall, to exploit and process deer and other animals attracted to mast-producing forest, and in the spring to exploit spawning fish. The internal ordering of house features at Yaworski and Berkmortel suggests that their occupations may have extended past autumn into early winter and it is remotely possible that Yaworski was occupied year-round. The Little site (Figure 9.10) which was completely excavated, revealed a semi-circular wall structure some 15+ metres across that is interpreted as a surround at the end of a deer drive. Over ten thousand deer elements, representing a complete age range, were recovered from a single feature within this structure. Excavations at the Crowfield site, as well as test excavations at three others, suggest that small briefly-occupied hunting camps were also utilized by the Early Iroquoian occupants of the Caradoc Sand Plain.

This detailed archaeological survey along with a major reconstruction of the palaeo-environment of the Caradoc Sand Plain (Williamson 1983b, 1985, 1986) has facilitated the investigation of seasonal movement and subsistence diversity, permitting emphasis to be placed on the differential location of settlements, their varying activities, and their relationships within the physical and social environment. Concomitantly, micro-environmental analysis (Williamson 1985:58-153) was employed to outline probable locations for individual sites. This included an examination of resource variability for the major micro-environmental zones (i.e. maple-beech forest, oak forest and black ash/tamarack swamps), of constraints on the origin of procurement, and of resources that were used in relation to those available.

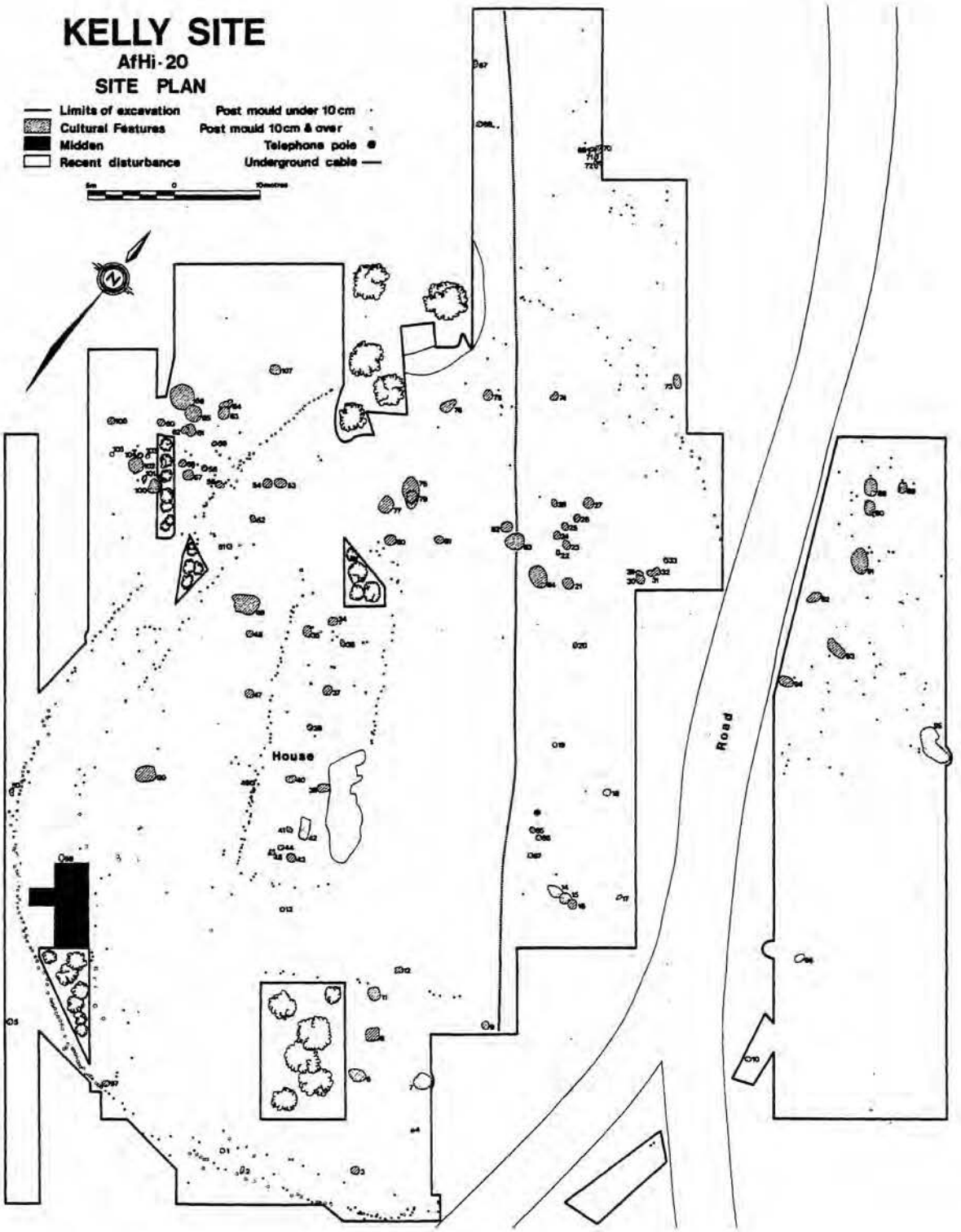

FIGURE 9.9: Kelly Site Map.

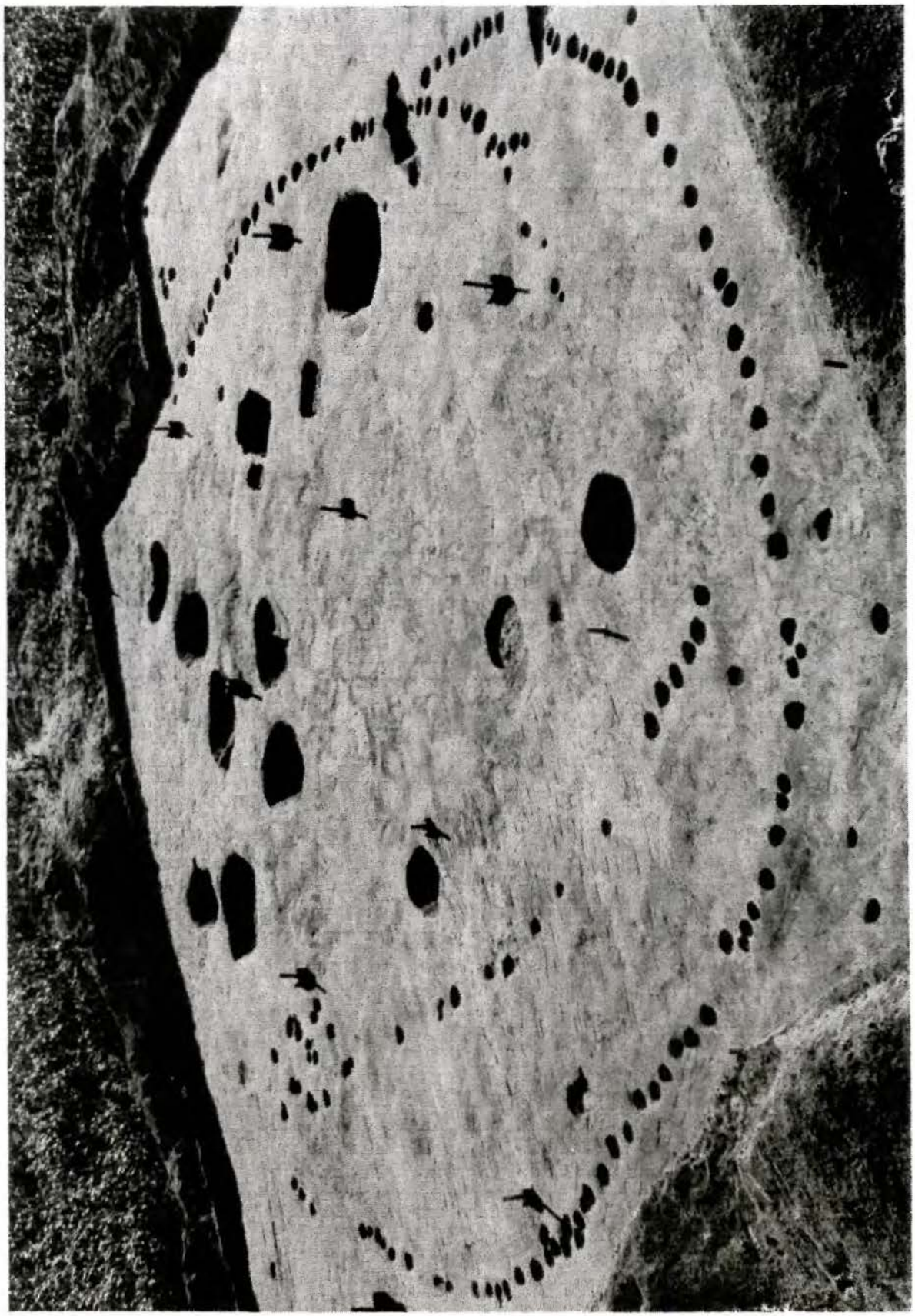

FIGURE 9.10: View of Semi-Circular Arrangment of Posts Enclosing Several Pits at the Little Site.

Catchment analysis (e.g. examination of the specific resources around each site) of the actual site locations indicated that all but four of the food exploitation camps were situated on soils that not only match the locations of historically-recorded oak stands on the sand plain, but are classified as unsuitable for horticulture (Williamson 1985:316-331). Resources exploited from these camps include deer, raccoon, squirrel, wild turkey, various river-dwelling mammals, fish, turtles, a variety of nuts and other wild plant foods. The larger villages, on the other hand, were situated on sand loams better suited for horticultural activity because they are more moisture retentive. Moreover, these villages were also within historically-recorded maple-beech stands close to swamps or marsh areas. While corn was recovered at all of the excavated sites, it is suggested that most of it was probably grown at the base settlements. Nevertheless, if individual families belonging to the same base settlement population were responsible for growing and harvesting their own corn, some may have done so at seasonally-occupied camps such as Yaworski, where women could tend crops and collect seasonally-available plant resources while men hunted and fished. Then, after the crop had been harvested and the resources processed, the group may have returned to the base settlement prior to the onset of winter. However, the fact remains that oak forest zones were likely less suited, in terms of soil quality and ease of forest clearance, for horticulture than were maple-beech zones. Hence it is not surprising that large villages were not located in oak forest zones.

In summary, these data, together with information recovered during the regional survey and the excavation of the Roeland village site (Williamson 1985:164-193), attest to a mixed economy involving horticultural villages. It was around these base villages that most crops were grown, and from them that hunting and gathering parties, which included men, women and children, travelled five to ten kilometres to gather and process food and other resources at specialized resource extraction sites. Although ceramic analysis failed to yield information useful for linking specific villages and exploitative camps (Williamson 1985:264-292), each village probably utilized a number of optimal collecting and hunting areas as a result of annual variations in nut production at localities even within one or two kilometres of one another. This explains the short occupation of hamlets and their numerical predominance, in comparison with villages, in the overall settlement pattern. If the sand plain was occupied for one hundred and fifty years, as radiocarbon data suggest (Williamson 1985:284; also Timmins 1985:74-79), each village would have been occupied for several decades, with the inhabitants utilizing many outlying exploitative hamlets.

One of the major differences between the Caradoc strategy and that known for the Late Iroquoian period is substantial evidence for the presence of women and children at all exploitative camps (Williamson 1985; compare Tooker 1964:58 for the historic Huron). This difference holds important implications for inferring the residence patterns and socio-political organization of the Caradoc population.

Historically, Ontario Iroquoians appear to have practiced matrilocal residence patterns whereby married couples resided with the wives' relatives as opposed to the patrilocal pattern in which the couple resided with the husband's relatives. Yet, the Caradoc data suggest that the behavioural patterns, which would have brought about a transition from the patrilocal residence, presumably a characteristic of earlier regional hunting and gathering cultures (see Finlayson 1977), to matrilocal residence, were not fully developed during Early Iroquoian times. Matrilocality has been attributed to the development of separate activity patterns whereby women remained in or near villages most of the year to plant, tend and harvest crops, while men were frequently absent on other business (Trigger 1976:136). Trigger argued that it may have seemed more efficient and less stressful to base the household upon a group of women who were closely related and were used to cooperating with one another in carrying out their day to day activities. This factor, along with the decreasing importance of hunting and fishing groups, may have led Iroquoians to adopt matrilocal residence. In the Caradoc case, however, it would appear that women and children frequently left the base villages to work at dispersed extraction camps and perhaps precluding the development of matrilocality at this time. Moreover, if matrilineality, or the tracing of descent through the female line, generally evolves as a response to matrilocal residence (Schneider and Gough 1961), it too may not have been developed to any significant degree by Early Iroquoian times.

On the other hand, Whallon (1968), applying the techniques which James Deetz (1965) evolved in his study of stylistic change in Arikara ceramic vessels, has argued that there is already evidence for the significant development of matrilocality by Early Iroquoian times. In examining stylistic attributes of ceramic pots from Owasco sites in

New York state which are presumed to have been made by women, he found strong associations of attributes within communities and a considerable degree of stylistic heterogeneity or differences between communities. Whallon postulated that these data indicated an emphasis on matrilocal residence which involved only a few women travelling from one community to another. It is significant, therefore, that the foremost result to emerge from the analysis of ceramics from the Caradoc sites, which are assumed to represent one community moving through time, is their stylistic homogeneity (Williamson 1985:277-282). Moreover, sequences of Early Iroquoian ceramic development are proving to be quite variable from one region to another. The analysis of the Caradoc sample illustrated great variability between roughly contemporaneous communities from the Caradoc, Norfolk (Noble 1975c; Fox 1976) and other regions (Fox 1982c) in attributes such as punctation, neck decoration and body treatment.

While there was admittedly considerable developmental uniformity at the macro-regional level, either matrilocal residence or some other factor, such as geographical isolation, appears to have limited communication among women, producing regional ceramic micro-traditions. In advancing these arguments, it is recognized that some archaeologists have criticized approaches which automatically link stylistic similarity with specific forms of social organization (Allen and Richardson 1971; Johnson 1972, Dumond 1977; Plog 1978; Hodder 1987). However, ceramic homogeneity was demonstrated to exist, having controlled for crucial factors such as time, function and acculturation, as required by Dumond (1977). Nevertheless, given the available evidence, one cannot rule out several other possible explanations for the perceived ceramic patterns [see, for example, Plog (1978) for some alternative explanations].

While variation in house morphology and degree of organization at Early Iroquoian village sites has been attributed to weakly-developed matrilineages (Noble 1968:301), the development of Iroquoian culture did not necessarily involve the evolution of the extended family, which probably already existed in Middle Woodland times (Trigger 1978:59). Early forms of longhouses or multiple-family dwellings have been documented for Middle Woodland sites in northeastern North America (Brose 1970; W. Ritchie 1969). House structures at the various Caradoc settlements as well as at other Early Iroquoian sites attest to the presence of extended family dwellings and perhaps smaller nuclear family residence units as well. One of the Yaworski site structures, for example, was circular (Williamson 1985:195-213; 1986). It was five metres in diameter and contained twenty-four features clustered around a central hearth area. It is also remotely possible that the presence of such structures, as well as longhouses, at special procurement sites might be interpreted as evidence for various-sized co-operative hunting and food-processing groups being sent out from base settlements. This would suggest the presence of a form of economic co-operation documented for the historic Iroquoians, involving work teams based either on kinship or friendship pursuing various seasonal economic activities (Trigger 1976:34).

Trigger has suggested that the estimated population of most early sedentary villages (200 to 400) falls comfortably within the size range of Middle Woodland spring and summer fishing groups, and that the small villages of the Early Iroquoian period may have been continuations of these early macrobands (Trigger 1976:134). Their small size also suggests that separate bands had not yet begun to join together to form larger communities and that leadership would have remained informal, perhaps being limited to an individual chief who also acted as a spokesman in dealings with neighbouring groups (Trigger 1981b:24). Early sedentary villages, therefore, may have been characterized by a flexible and evolving socio-political structure, whereby people were free to pursue seasonal subsistence activities in either extended or nuclear family units. Some members of these groups may have elected to remain at fall hunting sites into the winter, depending on the severity of the weather and the availability of resources. For example, the fauna recovered at the Yaworski site included the remains of at least one deer taken in early winter (Williamson 1985:205). Therefore, this site would appear to have been occupied from fall through to early winter in order to hunt and process deer and other animals attracted to the oak forest zone. Two of the four house structures on the site provide evidence of extensive interior activity suggesting late fall or winter occupation. One of these houses, located in the north section of the site, measured twelve metres by five metres, while the other smaller one, described above, was located in the south section of the site. Given the amount of rebuilding of the palisade and the absence of ceramic mends between the two excavated sections of the site, they probably represent two families of different size which utilized the site intermittently.

Such overall flexibility would explain the variations in house morphology, interior house activity and seasonally-intermittent occupations at the various exploitative camps documented for the Caradoc population. Until an increasing dependence on cultigens forced a realignment of work tasks which separated men from women for prolonged periods, residence and descent patterns may have remained largely unchanged from Middle Woodland times. There is no evidence that the appearance of early villages marked the end of the transition to matrilocal residence, matrilineality and formal village organization.

Yet, whatever flexibility characterized the seasonal movements of families belonging to a single community, the presence of Early Iroquoian villages attests to some form of economic co-operation to accomplish the tasks necessary for supporting a larger population year-round. Some women were probably required to provide constant care for crops at the base settlements, while the co-operation of large numbers of people probably was required at a communal deer drive. Moreover, evidence for butchering and curing processes and hide preparation at exploitation camps (Williamson 1985:195-244) suggest that most resource elements were being transported back to the village and the larger social group. For example, almost eighty percent of the bone recovered from the Yaworski and Kelly sites is from deer, yet it represents primarily distal leg or proximal radius fragments, but little in the way of skull, thoracic and shoulder elements. It is likely that once deer were killed, they were skinned and butchered where they fell, and the antlers, legs, meat and hides were taken back to the processing camp. There, the hides were processed and meat cured for their eventual transport back to the base settlement. Hide processing was evidenced at both Kelly and Yaworski by numerous scraping tools exhibiting polish and wear patterns which suggest that they were used for fleshing and dehairing (Williamson 1985:300-310). Also, meat curing may have been the function of one of the Yaworski site structures. It measured four metres by three metres and contained only a hearth area and one associated feature. A reduction in meat weight, which normally occurs as a result of curing, would have greatly facilitated its transport.

While there are, as yet, no comparable data, the Caradoc study challenges the traditional notion that the Early Iroquoian sequence was characterized by unilinear development among evenly distributed population groupings. It would seem that sites were distributed in a pattern of discrete, geographically-separated, regional clusters. Some groups may have associated with their neighbours more frequently than did others, and each was adapting to a slightly different environment. The evolution of this period should, therefore, be viewed as multilinear, with each region experiencing unique cultural adaptations and arriving at different stages of economic, social and political development at slightly different times.

Moreover, the economic and socio-political reorganization of Iroquoian society would appear to have been characterized by long periods of relative stability punctuated by sudden and explosive change. While the shift at the beginning of the Early Ontario Iroquoian period to base settlements located on interior sand plains marked a major transformation in settlement patterns, it would appear to have been followed by a more tranquil phase. The Caradoc data, in particular, suggest a period lasting through to the twelfth and thirteenth centuries, which was characterized by economic and socio-political equilibrium. During this period, Early Iroquoians were learning about horticulture and gradually increasing their reliance on cultigens. There was also a considerable degree of stylistic stability in ceramics throughout the entire period.

Therefore, there appears to be relatively little change in the settlement-subsistence strategies of populations from the first appearance of year-round occupied base settlements until the end of the thirteenth century when there was a sudden and radical transition in socio-political and economic life. At this time, increasing warfare and/or other socio-political factors resulted in the coalescence of regional Iroquoian populations into larger villages (see Dodd et al.: this volume). Whatever these factors were, they brought about dramatic changes in subsistence and settlement patterns at the household, community and regional levels. It was also accompanied by considerable ceramic change, such as the development of collared vessels and the burgeoning use of horizontal elements as decorative motifs. Hodder (1978:3-16), in his review of the correlations made by archaeologists with respect to material culture and social identity, suggests that dramatic stylistic alterations may be correlated with the formation of new social identities. The end of the thirteenth century seems to mark a point at which Iroquoian societies evolved major new social and political organizations perhaps comparable to those known to be present in historic times, although some less radical changes had already begun to occur during Early Iroquoian times.

In summary, it would appear that the overall transition from hunting and gathering to a horticultural economy occurred gradually, as did the reorganization of Iroquoian socio-political life. While Early Iroquoian settlement-subsistence patterns differed significantly from those reported for Late Iroquoian times, they also differed considerably from those hypothesized for earlier hunter-gatherers (see Spence et al.: this volume). There were centrally-based settlements, which reflected a growing emphasis on accumulating enough food for the winter period, a trend which had begun in Middle Woodland times. The appearance of villages, however, did not mark the end of the transition to horticultural economies, but rather, represented an important stage in their development.

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CHAPTER 10

THE MIDDLE ONTARIO IROQUOIAN STAGE

Christine F. Dodd, Dana R. Poulton, Paul A. Lennox, David G. Smith & Gary A. Warrick

Background

Although it had clear and important antecedents as a taxonomic entity (for detailed historical reviews see Kapches [1981], Pearce [1984] and D. Smith [1987 and this volume]), the Middle Ontario Iroquoian stage (M.O.I.), was proposed relatively recently by J. Wright (1966). It was argued that until A.D. 1300 southern Ontario was occupied by the two branches of the Early Iroquoian stage, Pickering in southeastern and southcentral Ontario and Glen Meyer in southwestern Ontario. As defined by J. Wright (1966), the Middle Iroquoian stage began at about A.D. 1300 with the fusion of these two branches caused by the conquest and absorption of Glen Meyer by Pickering. The result of this fusion was a cultural horizon located throughout most of southern Ontario and lasting only 100 years, from A.D. 1300 to 1400 (J. Wright 1966:54). The Middle Iroquoian stage was divided chronologically into two 50 year substages: Uren (A.D. 1300 to 1350) and Middleport (A.D. 1350 to 1400). The definition of the Uren substage was based on four sites (Uren, Downpour, and Elliot in southern Ontario and Oakfield in western New York State) and was described as being characterized by: "the dominance of the Iroquois Linear, Ontario Horizontal, and Ontario Oblique pottery types, a poorly developed pipe assemblage comparable to the Early Ontario Iroquois stage, and certain specific traits such as gaming discs and cup-and-pin game deer phalanges" (J. Wright 1966:54). The definition of the Middleport substage was based on seven sites. As well as the six sites from southern Ontario used in an initial, earlier proposal of the Middleport Horizon (Nodwell, Robb, Millroy, Middleport, Inverhuron, and Pound; J. Wright 1960), it included the Kienuka site from western New York State. The characterization of this substage was basically the same as that stated from the Middleport Horizon (J. Wright 1960) with the addition of a fully developed and elaborate pipe complex introduced from New York State (J. Wright 1966:55). J. Wright saw the end of the Middle Iroquoian stage occurring after A.D. 1400 with the break up of the cultural horizon into regional groups consisting of the precursors of the Iroquoian tribal units (Neutral, Huron, etc.) first contacted by Europeans in the historic period.

As noted by D. Smith (this volume), recent research has focussed on evaluating and refining J. Wright's (1966) cultural-historical scheme for the M.O.I., particularly concerning: 1) the chronological placement, and 2) the reality of the two substage subdivision (e.g. Uren/Middleport). Just where to end the M.O.I. stage has been as controversial as J. Wright's (1966) conquest hypothesis to explain its origins. Given the gradual, incremental change which characterizes the archaeological record of the time, some would argue that any subdivision of the M.O.I. and subsequent Late Ontario Iroquoian stage must be somewhat arbitrary. However, the present authors will argue that significant changes in settlement patterns and some aspects of material culture do exist to separate these stages, and that using these changes as distinguishing criteria, a transition to the Late Ontario Iroquois stage can be placed ca. A.D. 1400.

There has also been a trend in the post-1975 literature to eliminate the Uren substage as an organizing device and equate the M.O.I. solely with Middleport (e.g. Kapches 1981; Pearce 1984). This inference is based on Noble's

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(1975a:50) suggestion that the Uren type site was not transitional between the Early Ontario Iroquoian stage and Middleport but instead, was a multi-component, "mixed," Early Ontario Iroquoian and Middleport site. Yet, given that M. Wright's (1986) more recent investigations provide no evidence that the Uren site is multicomponent, as well as the presence of several other sites one can classify quite readily as Uren substage, the present authors consider the substage to be a useful construct (see also Poulton 1985a:79). Data and interpretations supporting that view will be presented in the following sections.

Besides the concern with culture history, research subsequent to J. Wright's (1966) formulation and synthesis of the M.O.I. stage has begun to explore the nature of the cultural systems of these Iroquoian groups. Following general trends seen in other areas of Ontario Iroquoian research, there has been a greater concern with documenting and explaining: the general distribution of sites over the landscape (e.g. Warrick 1984a:65, 1984b:14); regional variability (e.g. Kapches 1981); the full range of site types rather than focussing solely on large villages (e.g. Poulton 1985a; S. Smith 1979); interior village and house layout (e.g. Dodd 1984; M. Wright 1986; J. Wright 1974); subsistence practices (e.g. Kapches 1981; Lennox et al. 1986:98-155; M. Wright 1986); and the nature and significance of intra-site variation (J. Wright 1974; Lennox et al. 1986; Poulton 1985a, M. Wright 1982, 1986). Again, the nature and results of these kinds of studies will be outlined below.

Site Distributions

Uren sites are distributed throughout much of southwestern and southcentral Ontario. Distributions indicative of resident developmental populations extend from Forest in the west, to Barrie in the north and Coburg and Rice Lake in the east; within these borders most sites are located in areas drained by Lake Erie (61%) (Figure 10.1).

Survey bias and the impacts of urban expansion recommend caution in any discussion of the presence and absence of sites of this period and in the definition or enumeration of site clusters, especially in the Golden Horseshoe area (Poulton 1987). Nevertheless, it is apparent that the distributions of Uren sites generally coincide with those of the preceding Early Ontario Iroquoian stage sites, suggesting that the patterns observed represent one aspect of a series of discrete in situ developmental sequences. A notable exception is Huronia, where an expansion into Simcoe County during the Uren substage has been inferred (Warrick 1986, 1988).

In situ developmental sequences are most evident in the southwestern region (Figure 10.1), with Uren sites on the Grand River, Horner and Lynn Creeks, Big Creek, Otter Creek, Catfish Creek, all on the Lake Erie drainage basin, and on the Middle Thames River drainage east and west of London, as well as on the Parkhill Creek and Ausable River drainages of the Lake Huron basin. With respect to extreme southwestern Ontario, J. Wright (1966:56) inferred that the Uren distribution extended as far west as Chatham, on the basis of sites observed by T. Lee (1951a:47). Subsequent research has not substantiated this assertion, and current research indicates that the area in question was characterized by a Western Basin continuum through to the late fourteenth century (see Murphy and Ferris: this volume).

In southcentral Ontario, Uren sites or site clusters are present as part of long term development sequences in the area of the Niagara Escarpment near Milton and on the Highland Creek and Duffin Creek drainages of the Lake Ontario drainage basin. The eastern frontiers of the Uren substage are less well defined. J. Wright (1966:56) has noted that Uren sites extend as far east as Kingston, as represented at the Treasure Island site. Indeed, Pendergast (1975) has noted Uren and Middleport-like sites from Kingston east into the St. Lawrence Valley, and considers these manifestations to be ancestral to the St. Lawrence Iroquoians (see J. Jamieson: this volume).

The most northerly component of the Uren substage is represented by the "Barrie-Uren Stratum" at the Frank Bay site on Lake Nipissing (Ridley 1954). It is not beyond the bounds of possibility that this component is Algonquian rather than Iroquoian, and reflects Uren influences rather than an actual occupation. Most likely, however, it does pertain to a Uren presence, and represented an outpost of the Iroquoian-Algonquian trade network (J. Wright 1966) which extended into the historic period.

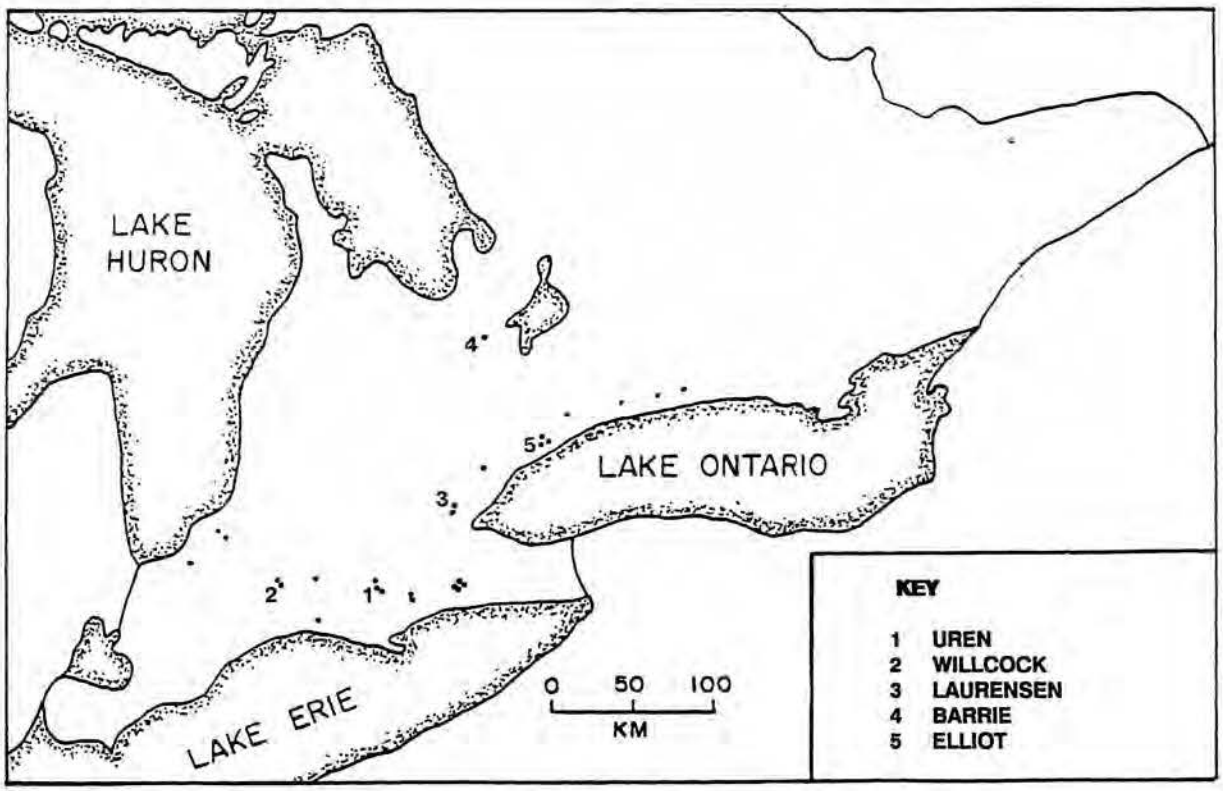

FIGURE 10.1: Location of Uren Substage Sites in Southern Ontario.

Middleport site distributions generally correlate with those of the Uren sites, representing the continuation of local developmental sequences in several areas of southcentral Ontario and throughout much of the southern part of southwestern Ontario (Figure 10.2). Granting the biasing factors previously discussed for Uren, the distribution of Middleport sites suggests the possibility of an expansion of populations during this substage to the northeast, toward the Kawartha Lakes, as well as into the Hamilton area.

The most notable extension of the Middleport range is represented by the Nodwell and Inverhuron sites in the northern part of southwestern Ontario. J. Wright (1966:61-62) originally inferred that these represented a westward colonization of the area by a group from Simcoe County; and has more recently proposed this presence as an incursion into the area to serve as a base for trade with northern Algonquians (J. Wright 1974:303-304). Further to the north, this substage is represented by the "Webb-Middleport Stratum" at the Frank Bay site on Lake Nipissing (Ridley 1954), indicating the continuation of Iroquoian-Algonquian trade. With respect to southeastern Ontario, as stated above, Pendergast (1975) has identified Middleport affiliated fishing stations along the St. Lawrence River. These sites will be discussed in the chapter concerning the development of St. Lawrence Iroquoians (see J. Jamieson: this volume).

Chronology

In J. Wright's original formulation of the Middle Ontario Iroquoian stage, the Uren substage was dated ca. A.D. 1300-1350, based on comparisons with the somewhat earlier Late Pickering Bennett site (J. Wright 1966:59). Concurrently, the Middleport substage was dated ca. A.D. 1350-1400 based on artifact comparisons with the Bennett site and on the assumption that tribal differentiation of the Huron-Petun and Neutral must have begun some 200 years before European contact (J. Wright 1966:64). As summarized elsewhere, subsequent researchers have gener-

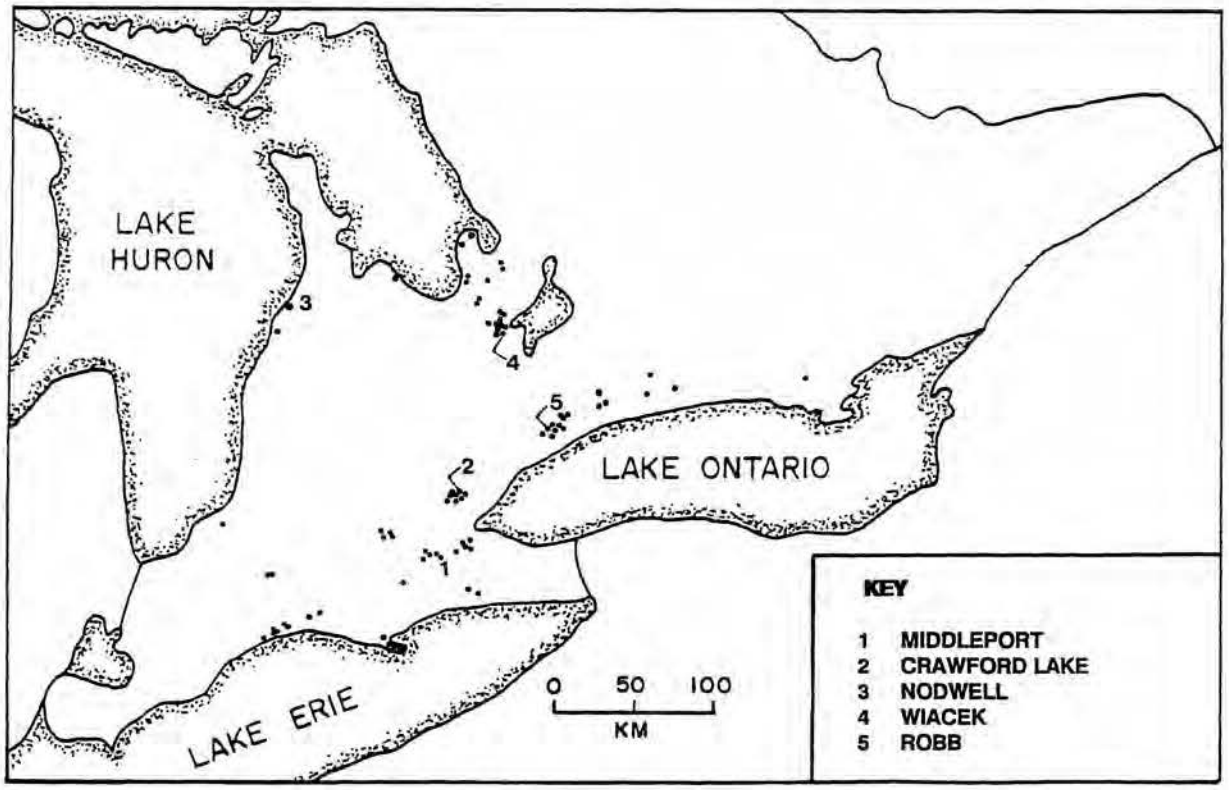

FIGURE 10.2: Location of Middleport Substage Sites in Southern Ontario.

ally redefined J. Wright's taxonomic entities. Regardless of the terms employed, researchers have also tended to expand the temporal limits of J. Wright's Middle Ontario Iroquois stage by a factor of some 50 to 100 years. Accordingly, radiocarbon dates have been used to infer that the Uren substage began some 50 years earlier, ca. A.D. 1250 (Kapches 1981; Timmins 1985; M. Wright 1986; Pearce 1984), while hypothesized correlations with dated lake varves have been used to infer that the Uren substage may have persisted as late as ca. A.D. 1365-1390 (Finlayson et al. 1989:5), and that the Middleport substage persisted into the mid-fifteenth century in at least one area (Finlayson and Byrne 1975:34; D. Smith 1987:142-144). The belief that tribal differentiation actually began during Middleport has been invoked as further support for the latter interpretation (Kapches 1981:70).

Although all of the researchers cited above have made some reference to radiocarbon dating, it was only recently that a critical evaluation was conducted of the available Middleport and other Ontario Iroquoian radiocarbon dates by Timmins (1985). This study was notable as the first broad application of calibration to correct determinations for atmospheric variation in radiocarbon. The results of Timmins' analysis generally support Wright's 100 year span for the Middle Iroquoian stage, but indicate that it began somewhat earlier, with Uren substage sites dating ca. A.D. 1250-1290, and Middleport ca. A.D. 1290 to 1340. Timmins (1985:163) further suggested that Middleport was a sloping horizon, which began earlier in the west, and persisted longer in some areas. The early end date for Middleport was supported by several mid-to-late fourteenth century dates for Huron and Neutral sites, although the determinations also indicated an effective lack of dated fifteenth century Late Iroquoian sites, a phenomenon which was attributed to an absence of sites of that period in the sample (Timmins 1985:108).

In many fundamental respects, Timmins' thesis represents a radical departure from the chronologies suggested by both J. Wright (1966) and subsequent researchers, and it is somewhat surprising, therefore, that the reaction has been limited. Poulton (1985a), who evaluated the issue in context of a local developmental sequence in the London area, took a different approach to those sites with more than one date: calibrating individual dates, rather than cali-

brating the averages of multiple dates as Timmins had done. The results were generally quite different, and tended to support J. Wright's chronology, with the Uren substage dating ca. A.D. 1290-1330, and the Middleport substage dating from ca. A.D. 1330 to ca. 1400.

The divergent chronologies proposed for the Middle Iroquoian stage reflect any number of factors, not the least of which has been that different researchers have given different weight to various absolute and relative dating techniques, and have tended to select those dates which best fit the existing or proposed chronologies. As a rule, Iroquoianists have relied first and foremost on relative dating, using the seriation of ceramic attributes and/or types, and have given only secondary consideration to absolute dating. The underlying suspicion of the value of radiocarbon dating owes much to the high frequencies of unacceptable radiocarbon dates obtained in the past. As Timmins (1985) demonstrates, however, significant advances have been made in recent years in the understanding of potential radiocarbon dating problems. In consequence, we can now recognize any number of procedural pitfalls: the need for calibration to correct for variations in atmospheric carbon; the need for isotopic fractionation of short-lived samples such as corn (see also J. Wright 1985); the need for multiple dates from individual sites; the need for proper sampling procedures; and the need to recognize that what is in fact being directly dated is not a site but an event. The realization of these and other concerns, combined with the growing number of radiocarbon dates, all argue that radiocarbon dating itself be given more serious consideration by Iroquoianists than it has in the past.

Turning to the evidence itself, the present sample of Middle Iroquoian radiocarbon dates numbers 43. For purposes of comparison, dates from earlier and later components have also been considered. The raw dates are detailed in Table 10.1, together with calibrated means and ranges for those determinations which are not patently incorrect. Calibrations were determined using Klein et al. (1982), and all determinations are expressed to the single sigma, or 66% level of confidence. Few researchers have calibrated their dates. Accordingly, calibrated dates have been accepted or rejected here on the basis of comparisons with uncalibrated dates accepted or rejected by the original researchers, and/or on the broad basis of generally accepted chronologies. This study has followed Poulton (1985a) in presenting individual calibrations rather than calibrated means for those sites with multiple dates. The rationale for this approach is that it results in fewer incongruities and that different dates for a given site may represent a real time span which it would be inappropriate to average. As most of the dates detailed here are also considered by Timmins (1985), readers wishing to compare the effects of the two approaches to calibration are referred to that study.

As Table 10.1 indicates, the Uren substage is represented by 10 dates from three sites, just over half of which are considered acceptable. These dates and 12 acceptable dates from eight late Glen Meyer and Pickering sites generally agree in placing the transition from the Early to Middle Iroquoian stages in the late 1200's (see also Williamson: this volume). It should be noted that the radiocarbon dates and ceramic assemblages of Bennett and Gunby suggest these sites were occupied within a generation or so of the Uren substage. Comparisons with the dates of succeeding Middleport sites further date the transition to Middleport to the first half of the fourteenth century. Accordingly, the time span inferred for the Uren substage is ca. A.D. 1280-1330.

The Middleport substage is represented by a much larger sample of 35 dates from 10 components. However, seven of the dates which derive from an experiment on non-charcoal materials from the Nodwell site (J. Wright 1985) are rejected, as are eleven other dates. Accordingly, the Middleport sample comprises a total of 17 acceptable dates from eight sites. Acceptable dates from those sites which pertain to the early to middle portion of the substage (New and Beswetherick) are all in the minority, but generally fall in the mid-fourteenth century. Those acceptable dates from sites which pertain to the late or terminal end of the substage (Reid and Pipeline) generally fall in the late fourteenth to early fifteenth century. It should be noted that the Edwards site, regarded by Pearce (1984) as early Middleport, is considered late Middleport here based on the ceramic assemblage, and that the Edwards dates, accepted by Pearce, are only considered here to be barely acceptable at the late end of the single sigma, ca. A.D. 1350-1360. To summarize, the available dates generally accord in placing the Middleport substage in the mid-to-late fourteenth century, with a suggested time span of ca. A.D. 1330-1400.

TABLE 10.1: Calibrated Radiocarbon Dates for Middle Iroquoian and Select Other Sites.**

SITE	LAB #	DATE A.D.	CALIBRATED DATE	CALIBRATED RANGE	COMMENTS ACCEPTED	COMMENTS REJECTED
Late Pickering						
Five Acre Field	WAT-11	1220 ± 100	1280 ± 60	1220-1340	1	
Bennett	GSC-143	1260 ± 130	1240 ± 95	1145-1335	1	
(AiGx-1)	M-1527	1280 ± 100	1350 ± 50	1300-1400	1	
Gunby	I-10,346	1255 ± 135	1235 ± 95	1140-1330	1	
(AiGx-5)	I-10,345	1385 ± 80	1370 ± 55	1315-1425	1	
Subtotal of Late Pickering sites					5	0
Late Glen Meyer						
Force	I-10,630	880 ± 80				1
(AgHd-1)	I-10,629	1235 ± 75	1290 ± 55	1235-1345	1	
	I-10,631	1245 ± 75	1290 ± 55	1235-1345	1	
	I-10,628	1325 ± 90	1335 ± 90	1245-1425	1	
Stafford	M-1553*	1220 ± 100	1280 ± 60	1220-1340	1	
(AeHg-3)						
Boyd Lake	I-11,827	1230 ± 75	1290 ± 55	1235-1345	1	
Slack Caswell	GSC 2619	1320 ± 60	1335 ± 35	1300-1370	1	
(AfHa-1)						
Roeland	I-12,774	1200 ± 80	1210 ± 50	1135-1285	1	
(AfHj-33)	I-12,773	1250 ± 80	1300 ± 50	1250-1350	1	
Subtotal of Late Glen Meyer sites					8	1
Uren Sites						
Uren	DIC-905*	560 ± 75				1
(AfHd-3)	WSU 1957*	1120 ± 70				1
	WSU 1959	1250 ± 70	1290 ± 30	1260-1320	1	
	WSU 1958	1270 ± 70	1315 ± 35	1280-1350	1	
	WSU 1965	1300 ± 60	1330 ± 35	1295-1365	1	
Willcock	NMC 1331	1080 ± 70	1145 ± 55	1090-1200		1
(AfHi-52)	NMC 1335	1075 ± 70	1145 ± 55	1090-1200		1
Bonisteel	BGS-986	1120 ± 120 B.C.				1
(AfGu-2)	BGS-1130*	1245 ± 80	1235 ± 185	1050-1420	1	
	BGS-987	1410 ± 120	1380 ± 110	1270-1495	1	
Subtotal of Uren sites					5	5
Middleport Sites						
New		1310 ± 75	1330 ± 40	1290-1370	1	
(AlGt-36)						
Beswetherick	M-1526	1360 ± 100	1340 ± 45	1295-1375	1	
(BdGw-1)						

TABLE 10.1: (continued)

SITE	LAB #	DATE A.D.	CALIBRATED DATE	CALIBRATED RANGE	COMMENTS ACCEPTED	COMMENTS REJECTED
Middleport	S-2896	925 ± 135				1
(AgHa-2)	S-2901	930 ± 135				1
	S-2897	1030 ± 60				1
	S-2902	1000 ± 60				1
	S-2898	1040 ± 60				1
	S-2899	1065 ± 135				1
	S-2895	1075 ± 60				1
	S-2900	1085 ± 60				1
Edwards	I-12,279	1250 ± 80	1300 ± 50	1250-1350	1	
(AfHi-23)	I-12,278	1260 ± 100	1310 ± 50	1260-1360	1	
Cooper	I-11,367	995 ± 80				1
(AgHb-18)						
Reid	I-9582	1235 ± 80	1290 ± 55	1235-1345	1	
(AdHc-5)	I-9581	1390 ± 80	1375 ± 55	1320-1430	1	
	I-9583	1400 ± 80	1380 ± 55	1325-1435	1	
	I-9584	1445 ± 80	1400 ± 55	1345-1455	1	
Crawford	DIC 258	1370 ± 40	1350 ± 35	1315-1385	1	
(AgHa-23)	S-971	1435 ± 95	1380 ± 25	1335-1405	1	
Nodwell	S-1716	745 ± 70 B.C.				1
(BcHi-3)	S-1715	100 ± 50				1
	S-1713	490 ± 45				1
	S-1711	925 ± 65				1
	S-1718	1040 ± 110	1085 ± 180	905-1265		1
	S-1714	1055 ± 40	1140 ± 110	1030-1250		1
	S-1717	1067 ± 120	1097 ± 182	915-1280		1
	S-1710	1240 ± 40	1285 ± 55	1230-1340	1	
	S-1712	1250 ± 45	1290 ± 55	1235-1345	1	
	S-1720*	1160 ± 55	1405 ± 105	1300-1510	1	
	S-503	1340 ± 75	1340 ± 35	1270-1410	1	
	S-1719*	1620 ± 45	1537 ± 117	1420-1655	1	
Pipeline	UGa-1905	1405 ± 85	1380 ± 55	1325-1435	1	
(AiGx-12)						
Wiacek	I-13537	1200 ± 80	1210 ± 75	1135-1285		1
(BcGw-26)	I-13538	1220 ± 80	1280 ± 60	1220-1340		1
	I-13538c	1290 ± 80	1320 ± 50	1270-1370	1	
Subtotal of Middleport sites					17	18
Total Middle Ontario Iroquoian					22	23
Prehistoric Neutral						
Slack Caswell	DIC 100	1420 ± 35	1380 ± 25	1355-1405	1	
(AfHa-1)						
Pond Mills	NMC 1331	1405 ± 70	1375 ± 30	1345-1405	1	
(AfHh-2)	NMC1335	1480 ± 75	1425 ± 40	1385-1465	1	

TABLE 10.1: (continued)

SITE	LAB #	DATE A.D.	CALIBRATED DATE	CALIBRATED RANGE	COMMENTS ACCEPTED	COMMENTS REJECTED
Thoren (AfHj-29)	I-13,023	1320 ± 75	1330 ± 45	1285-1375		1
Harrietsville (AfHf-10)	I-12,477	1350 ± 75	1335 ± 45	1290-1380		1
Sursas Spring (AiHd-8)	GSC-3367	1390 ± 60	1370 ± 25	1350-1395		1
Lawson	M-1552	1510 ± 100	1490 ± 75	1415-1565	1	
(AgHh-1)	S-2267	1710 ± 95				1
Subtotal of Early Neutral Sites					4	4
Prehistoric Huron						
Dunsmore		1360 ± 50	1350 ± 35	1315-1385		1
Bauman (BdGv-14)	NMC-1222	1460 ± 60	1415 ± 35	1380-1450	1	
Lite	GSC-1197	1450 ± 130	1450 ± 100	1350-1550	1	
White	S-858	880 ± 105				1
(AlGt-32)	S-858	1305 ± 45	1325 ± 45	1280-1370		1
	S-792	1515 ± 85	1490 ± 75	1415-1565	1	
	S-791	1630 ± 70	1540 ± 60	1480-1600	1	
	S-859	1725 ± 90				1
Draper	S-818	1360 ± 75	1350 ± 35	1315-1385		1
(AlGt-2)	S-861	1380 ± 95	1345 ± 40	1295-1385		1
	S-863	1455 ± 65	1410 ± 35	1375-1445	1	
	S-862	1520 ± 85	1495 ± 75	1420-1570	1	
	S-860	1545 ± 65	1505 ± 50	1455-1555	1	
	S-819	1740 ± 80				1
Subtotal of Early Huron sites					7	6
Grand Total					46	34

* corn
** all dates expressed to the single sigma and calibrated using Klein et al. (1982)

Several of the transitional to early prehistoric Neutral sites, such as Slack-Caswell, Crawford, Pipeline and Pond Mills have all been regarded at one time or another as Middleport, a fact which emphasizes their transitional nature. The radiocarbon dates for these sites cluster around the last quarter the fourteenth century and first half of the fifteenth century. Other sites of the Late Iroquoian period are unfortunately represented by single dates (Table 10.1), and most of these derive from sites that lack adequate samples of analyzed artifacts that could serve as the basis for an evaluation of the determinations, a problem which applies to Thoren, Harrietsville, Surasas Springs and Dunsmore. The scarcity of well-dated fifteenth century sites is regrettable, and it is particularly unfortunate that such excavated components as Moyer, Pound, Campbell and Coleman lack absolute dates.

Apart from radiocarbon dating, only two other absolute dating techniques have been attempted for Middle Iroquoian sites. One was the use of thermoluminescent dating on a pottery sample from the transitional Middle-to-Late Iroquoian Pond Mills site. This sample (DUR 28-2BS) dated A.D. 1550 ± 90 (1460-1640), and was considered unacceptable, in contrast to an associated radiocarbon date of 1425 ± 40 (NMC 1335) (Poulton 1985a). The second technique was the aforementioned use of varves in Crawford Lake to infer a correlation between the adjacent Crawford Lake site and varves dating A.D. 1435-1459 (Finlayson and Byrne 1975:34). That correlation, however, was originally only offered as an hypothesis subject to confirmation by further studies (Finlayson and Byrne 1975:35). It was subsequently suggested that the Crawford Lake site might actually represent a discontinuous occupation relating in whole or in part to earlier corn-pollen bearing varves (Poulton 1985a:131). Most recently the site has been reinterpreted as a satellite related to two or three sequential village occupations (Finlayson and Pearce 1989). Concurrently, it has been hypothesized that a nearby late Uren substage site, H & R, might correlate with varves dating ca. A.D. 1365 -1390 (Finlayson et al. 1989:5). Given the above considerations, and the fact that these inferred correlations are at variance with dated sites elsewhere in the province, it is suggested that the hypothesized correlations of the respective occupations with late fourteenth and mid-fifteenth century varves should be considered tentative until or unless confirmed by radiocarbon dates from the sites in question.

The reluctance of many Iroquoianists to accept the value of absolute dating is understandable, given the acknowledged problems with many of the past radiocarbon dates. These problems have only been complicated by other factors, including the proliferation of incompatible attribute analyses and a wide variety of conflicting terms for the Middle Iroquoian stage or parts thereof. Nevertheless, it must now be recognized that a better chronology is possible through the thoughtful application of radiocarbon dating. Moreover, a more reliable chronology for this key period in Iroquoian development is in greater need now than at any time in the history of the discipline. As Timmins (1985) notes, many researchers from the late 1960's onward were of the opinion that sufficient chronological control had been achieved to permit more complex studies of the origin and nature of social mechanism and change. If the present discussion demonstrates anything it is that some crucial aspects of the Middle Iroquoian chronology are still very much open to question. As a result, studies of such key matters as the existence and nature of regional variation, the presence of differential rates of change, and the causes of cultural change, all of which demand the prerequisite of a reliable chronology, may be inconclusive or open to continued debate, at best, and premature at worst (Poulton 1985a). At the very least these considerations argue the need for caution in considering any of the more involved hypotheses concerning the Middle Iroquoian stage.

Material Culture

The material culture of the Middle Ontario Iroquoian stage was originally defined by J. Wright (1966) on the basis of only four Uren substage sites and seven Middleport substage sites. Moreover, the data available to J. Wright for individual sites varied from full analyses to rim sherd seriation alone, and the samples as a rule were derived from limited rather than extensive excavations.

Given the potential biasing factors inherent in the above, J. Wright's trait lists have stood the test of time rather well. It should be emphasized at the outset, however, that detailed site analyses of large assemblages are still rare. Only two Uren substage sites meet those criteria: the Uren type site (Wintemberg 1928b; M. Wright 1986); and the Willcock site (Poulton 1985a). Similarly, only four Middleport sites have had both extensive excavation and reporting: the Middleport type site (Wintemberg 1948; Ambrose 1987; S. Jamieson 1986; Saunders 1986b); the Nodwell site (J. Wright 1974); the Wiacek site (Lennox et al. 1986); and the terminal Middleport or early Neutral Pipeline site (Busby 1979, D. Smith 1987).

The above considerations, combined with an absence of detailed comparative analyses and a virtual absence of functional analyses, are all limiting factors in our understanding of Middle Iroquoian material culture. Thus, while the following discussions serve to identify trait lists and quantitative diagnostics for the two substages, much more detailed study is needed on the origin and nature of temporal change and the existence and meaning of geographic variation.

Uren Material Culture

Ceramic Vessels

Uren vessels are predominately globular in shape. The rim form is transitional between the collarless vessels of the Early Iroquoian and the primarily collared vessels of Middleport and later times. Thus, Uren vessels are usually collarless or have poorly developed collars.

One trait of Uren vessels is the rolled rim. As defined and illustrated by Emerson (1956a:3,5), this form curves inward at the lip and is characterized by a deeply channeled interior, a convex exterior, and a poorly-defined or rounded basal collar. Emerson (1954:82-83) noted that this was the most popular rim form in Wintemberg's Uren site sample, and stated "it would appear that this is an early to early- intermediate type of rim form and useful as an early time marker." Elsewhere, Emerson (1956a:3) states that this form is very common on "early Ontario Iroquoian sites," and that it is comparatively rare "after middle Iroquoian times." Unfortunately, the frequencies of this form through time cannot be fully traced, owing to the fact that most recent analysts have neither employed the term "rolled rim," nor illustrated rim profiles (e.g. Poulton 1985a; Williamson 1985; Kapches 1981; Pearce 1984). Accordingly, this trait cannot be quantified for most sites. It would appear, however, that the rolled rim form was a popular trait from the terminal part of the Early Iroquoian stage to the Uren substage, and that more detailed analysis may demonstrate it to be a quantitative diagnostic of this general period.

Castellations on Uren substage vessels are most typically of the incipient pointed type, as defined by Emerson (1966), and are decorated with chevrons. They appear on approximately 20% of Uren vessels.

As with all Iroquoian ceramics, most vessels are decorated. The most characteristic exterior rim motifs of the Uren substage incorporate horizontals and consist of horizontals alone, obliques above horizontals, obliques below horizontals, and obliques above and below horizontals (Figure 10.3).

The technique used to produce these motifs on rim exteriors are typically varied and are predominated by push pull, incising, and linear stamping, used alone or in combination. Temporal trends in this attribute include a decline in the use of predominant Early Iroquoian techniques, notably cord-wrapped stick, and a decreased incidence of linear stamping, together with the high incidence of push-pull and a steady increase in the use of incising.

Both rim interiors and lips of vessels are usually decorated, although the incidence of these attributes is less than during the Early Iroquoian stage. Secondary rim decoration, most often in the form of a band of shallow punctates or short linear stamped obliques, occurs on a minority of vessels. One notable form of secondary decoration is "bossing." The incidence of this trait generally peaks late in the Early Iroquoian stage (C. Reid 1975b:45; M. Wright 1986:42), and J. Wright (1966:54) has suggested an arbitrary frequency of 10% or less to separate sites of that age from those of the succeeding Uren substage. However, recent research demonstrates that the incidence of bossing on Uren sites varies from absent to as much as 19%, indicating that the frequency of this trait is an unreliable device for marking the inception of the Uren substage (M. Wright 1986:42). In any case, what is significant is that bossing virtually disappears during the Uren substage.

The treatment of vessel bodies undergoes substantial change during the Uren substage. In southwestern Ontario, the ribbed paddle technique, virtually absent during Glen Meyer, dominates (Figure 10.3). This technique is represented on some 50-70% of body sherds and as such is a quantitative diagnostic of the substage in that region. Conversely, the technique of cord impression or malleation, the most popular technique throughout Glen Meyer, is usually present on less than 10% of Uren body sherds in southwestern Ontario. Plain bodies are second most popular, as they were on late Glen Meyer vessels. The above data are somewhat at variance with J. Wright (1966:58,65) who states that the scarified and checked stamp techniques, together with ribbed paddle, are dominant during the Uren substage. In contrast, the checked stamp treatment is absent at some Uren substage sites in southwestern Ontario, and only attains an appreciable frequency (12%) in the 1920 sample from the Uren type site (J. Wright 1966:70). An analysis of the 1977 sample from this site produced a much smaller frequency of checked stamp

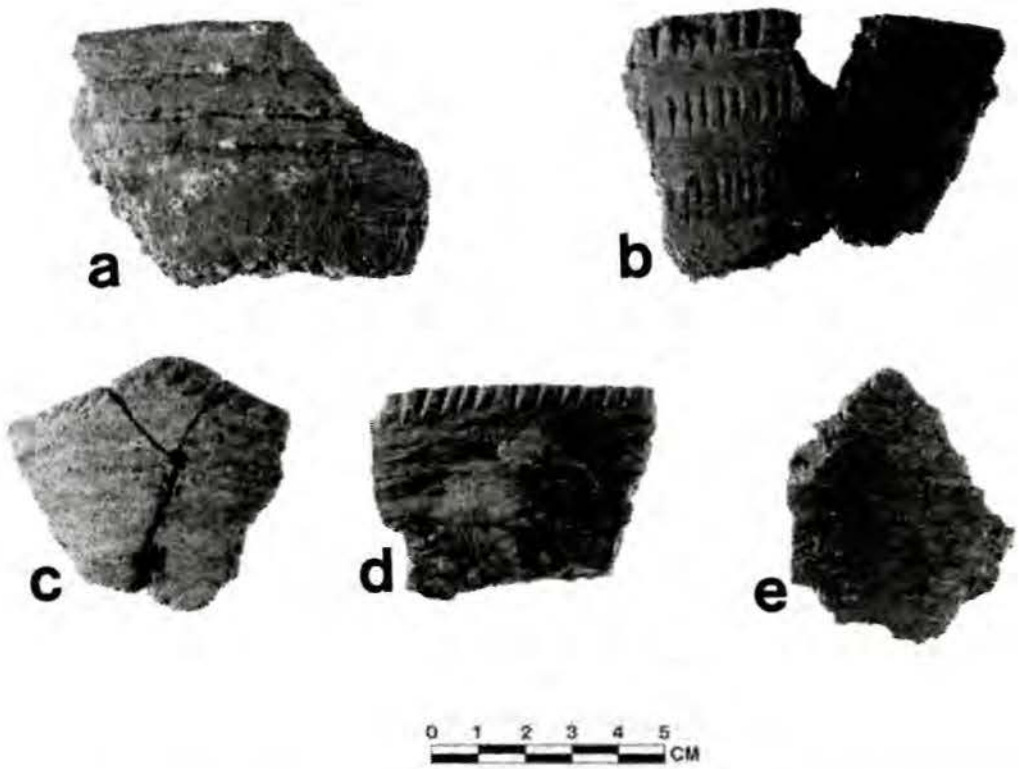

FIGURE 10.3: Uren Substage Ceramics. A: Iroquois Linear type rim sherd; B: Ontario Oblique type rim sherd; C: Ontario Horizontal type rim sherd; D: Middleport Oblique type rim sherd; E: Ribbed paddle body sherd. Courtesy of the Museum of Indian Archaeology, London.

sherds (3%) (M. Wright 1986:34). Finally, the technique of scarification, which declined in popularity on late Glen Meyer sites, virtually disappears in this region during the Uren substage: it is present only as a minority treatment and never in frequencies of more than 2%. In southcentral Ontario, where plain and ribbed paddle treatments were equally popular during late Pickering, the pattern is similar. The Thomson site body sherd sample (n=454) has 85% ribbed paddle body sherds and only 6% plain; while the later Elliot site (n=1436) has 57% ribbed paddled and 39% plain (Kapches 1981:72-4,86). Concurrently, the checked stamp treatment, which declined in popularity on late Pickering sites, virtually disappears during the Uren substage: it is present only at the Thomson site (7%). The above data demonstrate that ribbed paddle is also a quantitative diagnostic of the substage in this region, but suggest that the extremely low frequency of plain sherds at Thomson may reflect sample bias rather than reality.

Rim sherd or vessel types, based on the consistent co-occurrence of certain motifs and rim shapes, represent one other useful analytical tool. Prior to the late 1960's, comparative analyses invariably employed ceramic typology as a fundamental technique for the investigation of such matters as spatial relationships and chronological change. Since then, analysts have preferred the use of ceramic attributes to explore these and other issues, owning to observer bias in distinguishing between types and to other problems (J. Wright 1967b,1980a). The debate over pottery types has been discussed in detail by D. Smith (1983,1986,1987). Unfortunately, the potential value of attribute analyses has not been fully realized, as the approaches used by various analysts have not always been compatible (Lennox and Kenyon 1984:24). Accordingly, the present study of Middle Iroquoian material culture has employed types to a limited degree for comparative purposes.

In order to minimize the myriad of biasing factors (Lennox and Kenyon 1984), only two analyses were used wherever possible: J. Wright (1966) supplemented by D. Smith (1987). (It should be noted that in some cases the reanalyses of rim or vessel samples differed significantly from original analyses: e.g. compare analyses of the Pipeline site by D. Smith [1987] and Busby [1979]). In the present study, types subject to observer error (Pound Necked/Black Necked and Huron Incised/Lawson Incised) were combined; and the analysis was restricted to the major types found on Middle Iroquoian sites: Ontario Oblique, Iroquois Linear, Ontario Horizontal, the three predominant types characterizing Uren substage sites (J. Wright 1966:54); and the Middleport Oblique, Pound/Black Necked and Lawson/Huron Incised types of Middleport and later. Figure 10.4 illustrates in a stylized manner typical rims of each of these types.

The results are illustrated in Figures 10.5 and 10.6 and tabulated in Tables 10.2 and 10.3 for southcentral Ontario and southwestern Ontario, respectively. As noted by J. Wright (1966:54), three pottery types dominate the Uren substage, occurring in frequencies of 50% or more: Ontario Oblique, Iroquois Linear, and Ontario Horizontal. The latter type is believed to have evolved from Iroquois Linear (MacNeish 1952a:19; Ridley 1958b; J. Wright 1966:44). Iroquois Linear was predominant on late thirteenth century sites, but only survived after the Uren substage as a minority type. As such, it serves to demarcate Uren sites from those of the subsequent Middleport substage (Figures 10.5 and 10.6). Ontario Oblique, a dominant type of the Early Iroquoian stage, similarly only survived as a minority type in Middleport and later times.

Pipes

J. Wright (1966:54,97-98) characterized the Uren substage pipes as poorly developed, and inferred that the well developed pipe complex of the Middleport substage was introduced from New York State. More recent research, however, indicates that this complex developed in situ as part of the Early to Late Iroquoian continuum (Kapches 1981:205-213; Pearce 1984:225-226; Williamson: this volume; M. Wright 1986:45-47).

The transitional nature of Uren substage pipes has been recognized at a number of terminal Early Iroquoian and Uren substage sites, most notably the Uren type site (M. Wright 1986:45-47) and the Willcock site (Poulton 1985a:79-80). These transitional assemblages generally feature early traits (short, sometimes crude pipes with obtuse-angled elbows, non-circular stem cross-sections and punctate or linear impressed decorations) as well as later traits (longer, well made pipes with circular stem cross-sections, right-angled elbows and conical or barrel shaped bowls decorated with incising in the form of horizontals or complex zoned triangular motifs; Figure 10.7).

Stone pipes are rare (Figure 10.9). The few reported examples tend to be stemmed and cylindrical, barrel-shaped or conical in form (M. Wright 1986:45-46; Poulton 1985a:65). One wedge form stemless pipe has also been reported (Poulton 1985a). Cylindrical-shaped bowls are most common.

Miscellaneous Ceramic Artifacts

Perforated and unperforated pottery gaming discs, and crude pottery beads are present but rare traits on Uren sites.

Chipped Lithics

Relatively little detailed study has been devoted to Uren substage lithics, with the exception of M. Wright (1986), and little comparative data are available. The inventory includes triangular and notched projectile points, simple and biface drills, strike-a-lights, gravers and scrapers of the side, spokeshave and random flake varieties (Figure 10.8).

Triangular projectile points are isosceles in shape and tend to be bilaterally symmetrical, lacking the unilateral barb found on some points of the earlier Glen Meyer type (Fox 1982d). In addition, the triangular points have a greater tendency to have straight rather than concave basal margins which are characteristic of earlier triangular

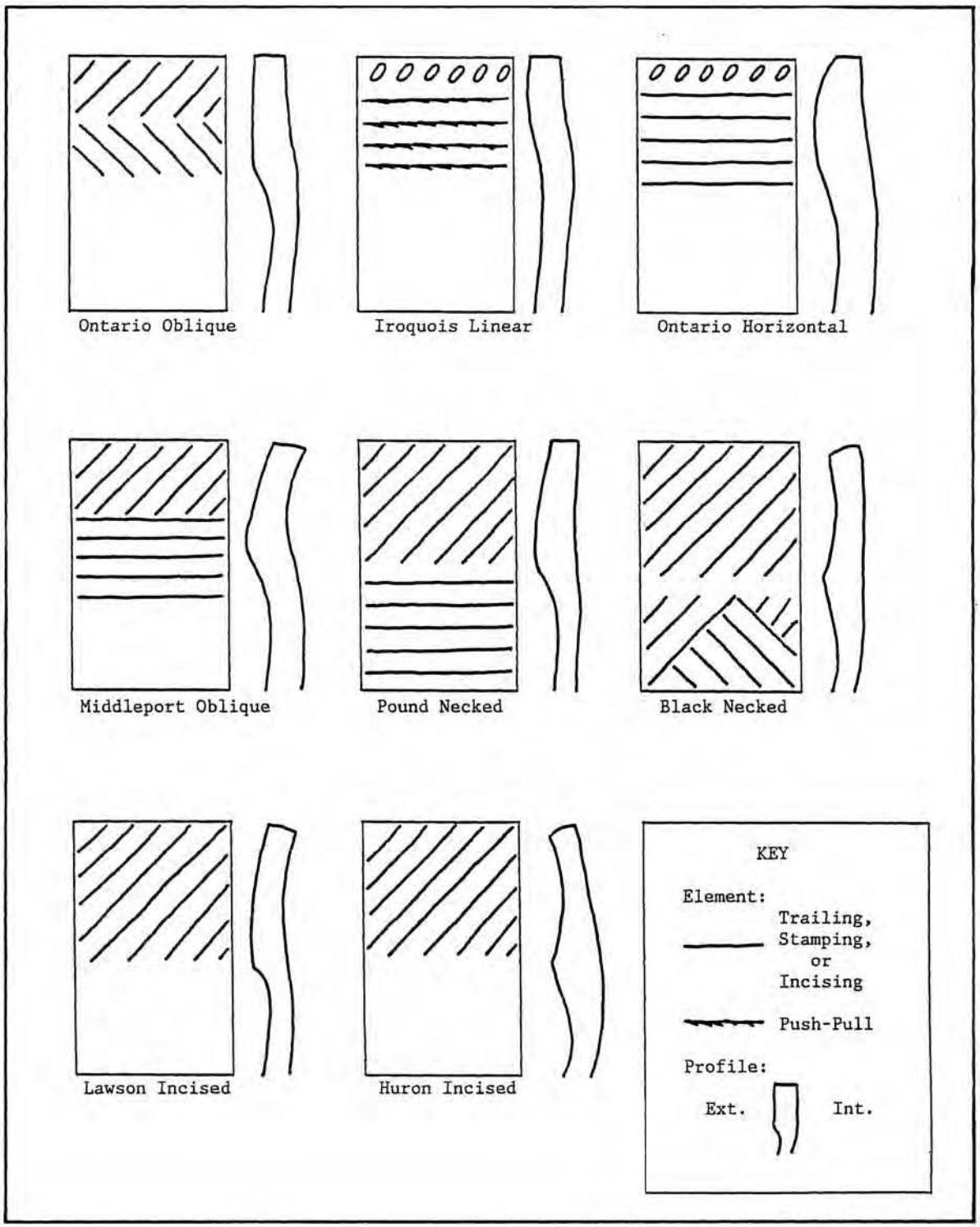

FIGURE 10.4: Schematic Diagrams of Ceramic Vessel Collars and Necks Illustrating Motifs and Profile Rim Shapes of Typical Middle Ontario Iroquoian Types.

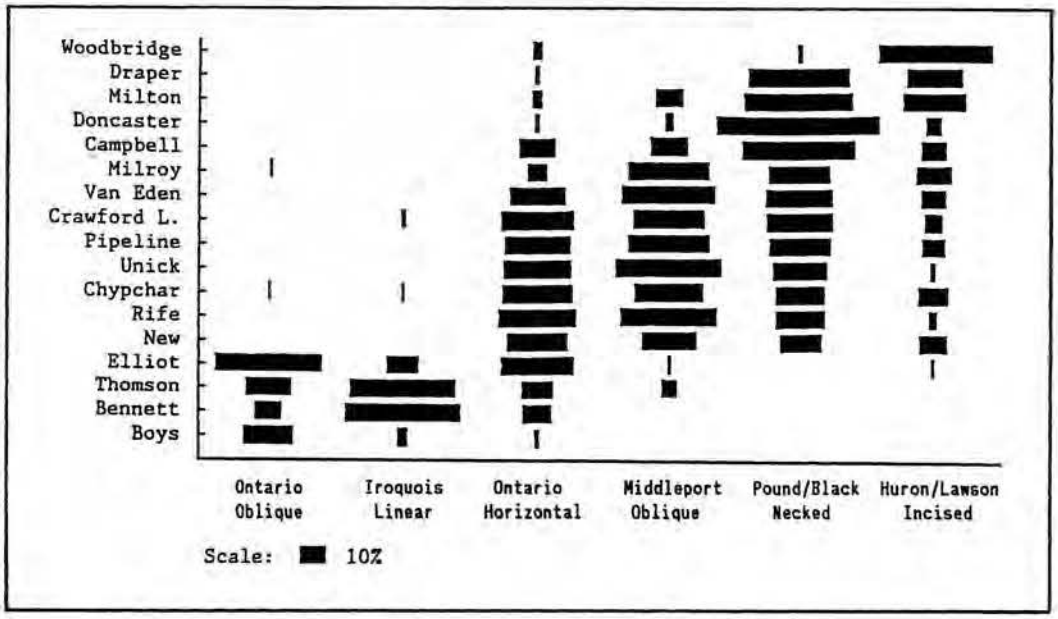

FIGURE 10.5: Seriation of Select Rim Sherd Types for Southcentral Ontario Middle Ontario Iroquoian Sites.

forms. Triangular points are more common than notched points, which may be either side-notched, corner-notched, or corner removed. Regardless of form, the notched specimens appear to represent a continuation of the DeWaele Point type, defined by Fox (1982e), with relatively poorly developed, wide shallow notches (Figure 10.8).

Projectile points from the Willcock site represent an exception to several of the above rules (Poulton 1985a:59-60, 83-84). The majority of points from this site feature well-developed corner notches. Moreover, notched points at this site are ten times as common as triangular forms, a ratio aberrant for any period in Iroquoian development. The preponderance of notched points may reflect some aspect of functional variation, while the points themselves would appear to constitute an early variant of the Middleport Notched type (Fox 1980e).

Ground and Rough Stone

Celts, manos and metates, hammerstones, anvil stones, abraders or whetstones, slate or shale pebble pendants and ground slate knives or "drawshaves" are all present in the Uren substage (J. Wright 1966:59; M. Wright 1986; see Figure 10.9).

Organic Artifacts

The Uren substage inventory subsumes a wide variety of artifacts manufactured from bone, antler, teeth and shell. Typical traits include modified deer phalanges interpreted as cup-and-pin game elements, conical antler projectile points, worked beaver incisors, bone awls, projectile points, netting needles and beads, cylindrical antler flakers, turtle shell rattles, and shell polishers or pottery smoothers, whistles or flutes and unilaterally barbed harpoons

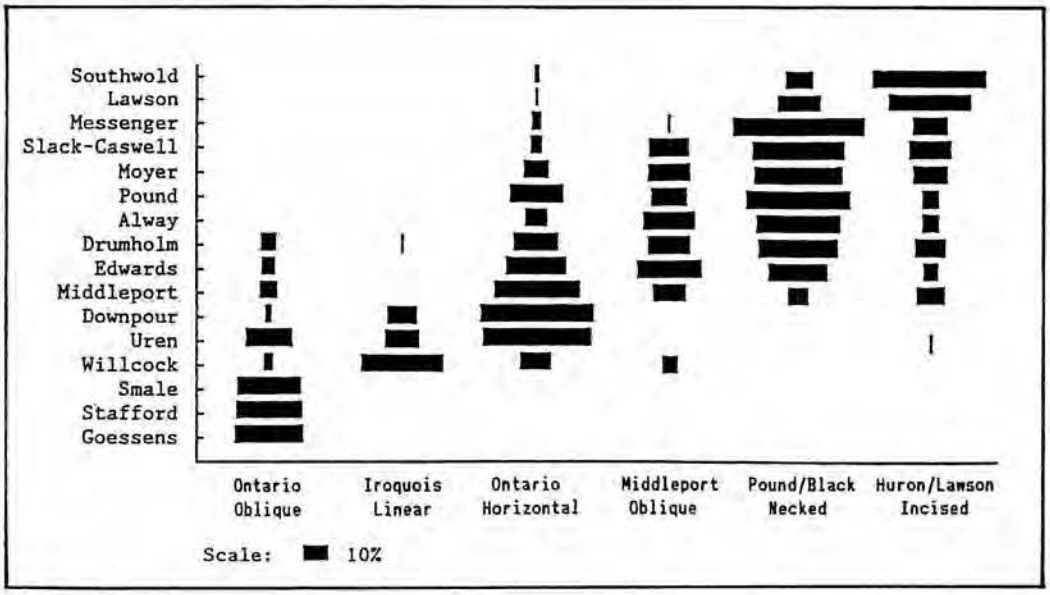

FIGURE 10.6: Seriation of Select Rim Sherd Types for Southwestern Ontario Middle Ontario Iroquoian Sites.

(J. Wright 1966:54; M. Wright 1986; Poulton 1985a:69-71, Kapches 1981:107) (Figure 10.7.) Carved or decorated bone awls or pins appear late in the Uren substage (Kapches 1981:107-108).

Middleport Material Culture

Ceramic Vessels

Collared vessels predominate after the Uren substage, forming approximately 90% or more of Middleport substage samples. Concurrently, collar development is better defined, trending toward the well developed collars of the Late Iroquoian stage. The trend toward pointed castellations continues through Middleport (Kapches 1981:202; Pearce 1984:216), with incipient pointed castellations dominant.

Obliques above horizontals are the most popular vessel collar motif, followed closely by horizontals alone, and obliques alone. Temporal trends are clear, with a decrease through Middleport of horizontal motifs, an increase of obliques above horizontals, and a steady increase in the incidence of oblique motifs. The technique of incising is dominant, with linear stamping decreasing through time and push-pull, the dominant Uren substage technique, virtually absent in Middleport. On the balance, rims which comprise or include incised horizontals are most characteristic of the substage (Figure 10.10).

It is generally acknowledged that the frequencies of lip and interior vessel decoration decrease through time during the Middleport substage (Kapches 1981:195,199-200; Pearce 1984:212-215; Poulton 1985a:81,123). The trend is clearest for lip decoration which is generally present on over 50% of Uren substage vessels, and only some

TABLE 10.2: Relative Frequency of Select Rim Sherd Types for Southcentral Ontario.

SITE (F)	ONTARIO OBLIQUE	IROQUOIS LINEAR	ONTARIO HORIZONTAL	MIDDLEPORT OBLIQUE	POUND/BLACK NECKED	HURON/LAWSON INCISED
Boys (W-257)	21	4	2			
Bennett (W-543)	11	47	12			
Elliot (W-67)	19	43	13	6		
Thomson (S-70)	45	13	30	1		1
New (S-54)			25	22	17	11
Rife (276)			32	39	20	3
Chypchar (S-143)	1	1	29	28	20	12
Unick (S-51)			28	43	22	2
Pipeline (S-378)			27	33	25	9
Crawford Lake (S-116)		2	30	29	27	7
Van Eden (S-82)			23	38	27	10
Milroy (W-129)	1		8	33	25	14
Campbell (S-170)			15	15	47	10
Doncaster (W-314)			2	3	67	6
Milton (S-91)			4	11	45	25
Draper (W-816)			2		42	22
Woodbridge (W-226)			4		2	46

F Frequency W J. Wright (1966) RP R. Pearce (1984)
S D. Smith (1987) P D. Poulton (1985a)

20% of Middleport vessels. Moreover, the decrease through time in this trait is consistent for the period under question. The trend is less consistent but still observable for interior decoration: it is generally present on roughly 50% of Uren vessel samples and 20-40% of Middleport vessels. One anomaly is in the London area, where the incidence of interior decoration actually rises briefly during the Middleport substage (Pearce 1984:212-213).

Vessel body surface treatment during the Middleport substage is markedly different from the preceding Uren substage: plain body sherds consistently form over 80% of Middleport assemblages, and represent a quantitative diagnostic, relative to Uren, which was dominated by the ribbed paddle treatment. In contrast, the latter treatment usually forms only 5% or less of Middleport substage body sherd samples. The predominance of plain body sherds characteristic of Middleport continues throughout the remainder of the Iroquoian sequence in Ontario. It should be noted that the above pattern is essentially the reverse of that recognized by J. Wright (1966:62), who inferred a dominant position of the ribbed paddle technique for the Middleport substage. J. Wright's observations appear to have been based primarily on a reading of the analysis by Wintemberg (1948:11-14) of body sherds from the Middleport type site. While ribbed paddle is clearly the dominant technique discussed by Wintemberg for that assemblage, all other site data reviewed in the present study indicates its popularity at the Middleport site is anomalous for this substage. The cause of this anomaly is unknown, although it is possible that sample bias is at fault and that Wintemberg simply failed to describe or enumerate plain body sherds for the site. Some support for this interpretation may be derived from the fact that Wintemberg (1939) appears to have omitted to catalogue and describe a large number of plain vessel rims recovered by his 1921-1923 excavations of the Lawson site.

TABLE 10.3: Relative Frequency of Select Rim Sherd Types for Southwestern Ontario.

SITE (F)	ONTARIO OBLIQUE	IROQUOIS LINEAR	ONTARIO HORIZONTAL	MIDDLEPORT OBLIQUE	POUND/BLACK NECKED	HURON/LAWSON INCISED
Goessens (W-31)	31					
Stafford (W-207)	30					
Smale (W-56)	29					
Willcock (P-248)	4	35	14	7		
Uren (W-1087)	21	15	48			1
Downpour (W-32)	3	13	50			
Middleport (W-308)	8		38	15	9	12
Edwards (S-52)	6		27	29	26	6
Drumholm (S-74)	7	1	20	19	35	13
Alway (RP-30)			10	23	37	7
Pound (W-676)			24	16	46	7
Moyer (S-503)			11	19	39	15
Slack Caswell (S-39)			5	18	41	18
Messenger (S-154)			4	1	59	15
Lawson (RP-1211)			1		19	36
Southwold (W-586)			2		12	49

F Frequency W J. Wright (1966) RP R. Pearce (1984)
S D. Smith (1987) P D. Poulton (1985a)

Based on rim sherd typology, J. Wright (1966:61) defined three types as dominant, usually forming 50% or more of a Middleport substage sample: Ontario Horizontal, Middleport Oblique and Lawson Incised. Although researchers have tended to accept this statement, it has been noted that the Lawson Incised type is virtually absent in at least one local sequence (Poulton 1985a:143), and a review of the data suggests that only the first two types, Ontario Horizontal and Middleport Oblique, are dominant on true Middleport sites, forming 50% of rim or vessel samples (Figure 10.5 and 10.6). Conversely, Lawson Incised almost never attains a frequency of more than 10% on such sites, even when lumped with the similar Huron Incised type. Comparisons demonstrate that Lawson/Huron Incised only become dominant types during the succeeding Late Iroquoian stage.

Of particular interest in defining Middleport and the transition to the Late Iroquoian stage are the frequencies of the Pound Necked type and early examples of the Black Necked type. Pearce (1984:190-191) recognized Pound Necked as a dominant type of both Middleport and early prehistoric Neutral. The Pound and Black Necked types do appear during Middleport, but neither type, alone or in combination, attains high frequencies (up to 25%) except on mid-to-late Middleport sites. What should be noted is that very high frequencies of Pound and/or Black Necked are only represented on sites immediately following the Middleport substage, ca. A.D. 1400-1450. Examples include the Doncaster, Pound, Slack-Caswell, Moyer, Campbell, Milton, Messenger and Pond Mills sites, with Pound/Black Necked frequencies of between 38% and 83%. The increase in this combined type is paralleled by a decrease in the two dominant Middleport types, Ontario Horizontal and Middleport Oblique. The transitional nature of these sites may be seen in the fact that virtually all have been variously identified as late Middleport or early Late Iroquoian. In summary, the present study indicates that, as a rule of thumb, sites characterized by higher frequencies of Pound/Black Necked than Ontario Horizontal and Middleport Oblique combined should be considered early Late Iroquoian rather than Middleport. This suggestion is supported by other lines of evidence discussed later in this chapter.

FIGURE 10.7: Miscellaneous Uren Substage Artifacts. A: Ceramic pipe bowl; B: Juvenile vessel; C: Juvenile pipe; D: Cylindrical antler flaker; E: Bone awl; F: Modified deer phalange for cup and pin game; G: Bone bead. Courtesy of the Museum of Indian Archaeology, London.

Pipes

A well developed clay pipe complex is a characteristic of the Middleport substage (J. Wright 1966:55; see Figure 10.11). Compared to the earlier Uren pipes, typical examples have longer bowls and stems, right-angled bowl-stem junctures, and stems with circular cross-sections (J. Wright 1966:63). With respect to bowl shape and decoration, percentage frequencies are less reliable than in rim sherd studies owing to the generally smaller sample size of pipes. However, conical pipes tend to be most popular, usually forming over half of a given sample, followed by barrel and cylindrical shaped bowls, with lesser frequencies of other shapes, including vasiform. Roughly half of the pipes are usually plain. The most popular decoration consists of encircling lines of incised horizontals, alone or above a row of punctates (J. Wright 1966:62-63). Also common, and characteristic of Middleport, are conical and barrel-shaped bowls with complex decorative motifs consisting of fine incised lines forming opposed triangles.

It is generally accepted that trumpet pipes are a relatively late Middleport to early Late Iroquoian stage trait (Kapches 1981:208; J. Wright 1966:71; see Figure 11.10b). Indeed, a significant increase in the frequency of trumpet pipes, especially of the Plain Trumpet type (Emerson 1966), appears characteristic of the early Late Iroquoian stage, and may be presumed to be responsible for a decreased incidence of decorated pipes at that time. A study of the Middle Iroquoian sites in the Crawford Lake area by D. Smith (1987), however, offers an alternative interpretation for the temporal placement of trumpet pipes, with broad implications. This study suggests that the distribution and frequency of trumpet versus conical pipes indicates stylistic differences between contemporaneous communities, and further infers that this pattern is reflected throughout southern Ontario.

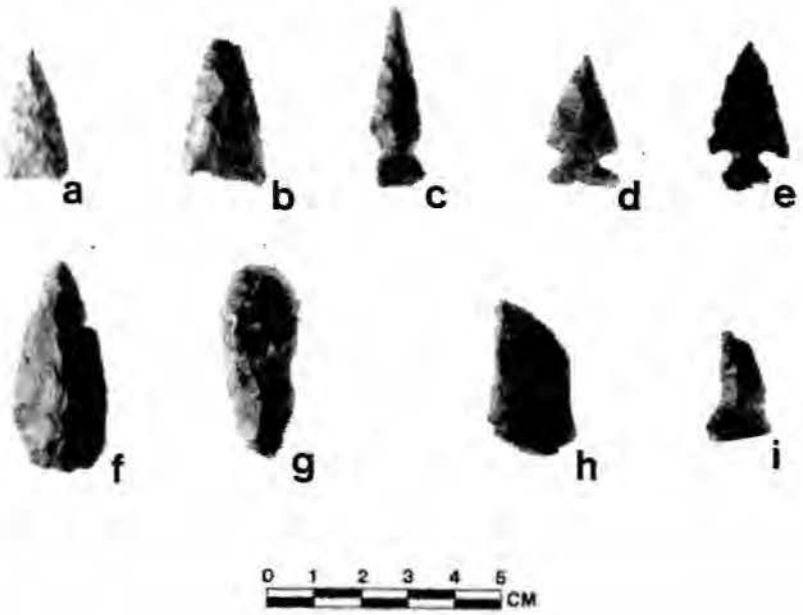

FIGURE 10.8: Uren Substage Chipped Stone Artifacts. A: Triangular projectile point; B: Triangular projectile point preform; C: Corner-removed projectile point; D-E: Side- to corner-notched projectile points; F: Projectile point preform; G: End scraper; H: Side scraper; I: Drill on biface fragment. Courtesy of the Museum of Indian Archaeology, London (D-H) and Ontario Ministry of Culture and Communications (A-C).

Effigy pipes, a major characteristic of the succeeding Late Iroquoian stage, are known during the Middleport substage, with both human and zoomorphic forms represented (Noble 1979:69-70). Rare early examples include a human effigy "Donut-Eye" clay pipe from the Middleport site (Wintemberg 1948: Plate XVII, Figure 19) and a human effigy with a top- knot from the New site (Kapches 1981:144). Examples of zoomorphic clay pipes include a bird effigy from the Pearse site (Poulton 1979a: Plate 3, Figure 6) and a salamander effigy from the Middleport site (Wintemberg 1948: Plate XVII, Figure 26). The latter specimen is very similar to a cylindrical-shaped unstemmed effigy of limestone from the Hoar site (Poulton 1979a, Plate 5, Figure 20), both featuring salamanders in shallow relief hugging bowls which are decorated with opposed motifs executed by incising.

Miscellaneous Ceramic Objects

As in the earlier Uren substage, crude pottery beads and pottery gaming discs are occasional traits on Middleport sites.

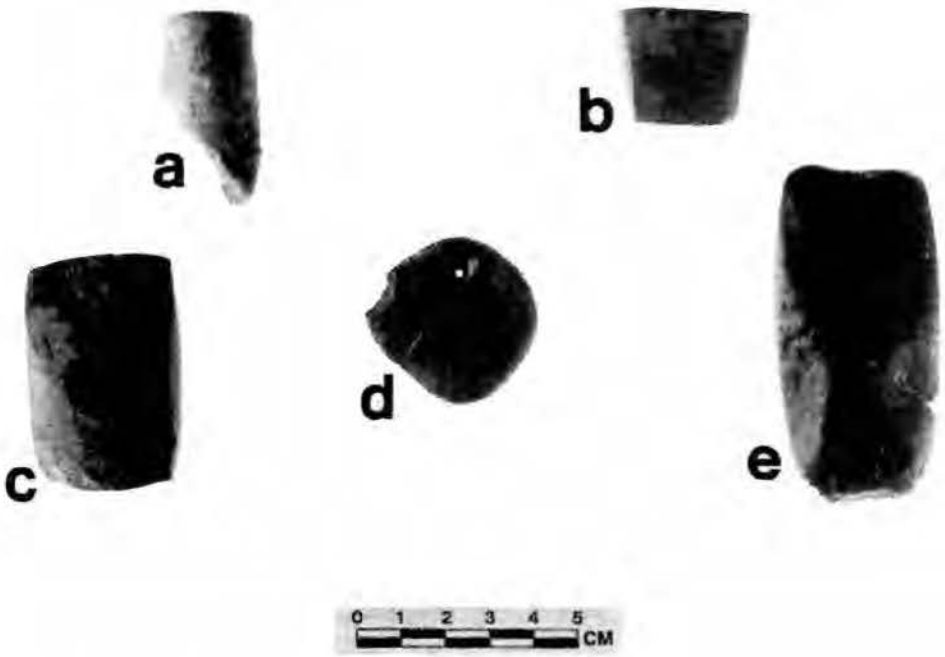

FIGURE 10.9: Uren Substage Ground Stone Artifacts. A: Cylindrical stone pipe; B: Wedge form stone pipe; C, E: Celts; F: Shale pebble pendant. Courtesy of the Ontario Ministry of Culture and Communications (A,D) and the Museum of Indian Archaeology, London (B,C,E).

Chipped Lithics

As with the Uren substage, relatively little study has been devoted to the comparative analyses of Middleport chipped lithics. One recent study suggests that sites in Simcoe County which were far removed from sources of suitable raw material had poorly developed chipped lithic industries, and that formal tools in particular may have been obtained as finished artifacts from the north shore of Lake Ontario or in southwestern Ontario (Lennox et al. 1986:93-94). A similar hypothesis has been proposed for the later Huron and Neutral (Poulton 1985b:34), with trade and/or exchange of raw materials or finished artifacts from southwestern to southcentral Ontario. It seems probable that the same pattern pertained in Uren and earlier times, although comparative data are lacking.

All of the chipped lithic traits enumerated for the Uren substage continue in Middleport. The most notable change in chipped lithics is a marked increase in the incidence of notched projectile points which J. Wright (1966:63) recognized as a quantitative diagnostic of the Middleport substage (Figure 10.12). Although J. Wright specified side-notched points in the above remark, corner-notched specimens appear to be more-or-less equally common. As a rule, unnotched points tend to be roughly twice as common as notched points, and points in general tend to be better made than in Uren and earlier times, excepting the aforementioned Willcock site.

Two point types have been identified for the Middleport substage (Fox 1980e): Middleport Triangular; and Middleport Notched. Neither has as yet been formally defined. It has been suggested that these two types were

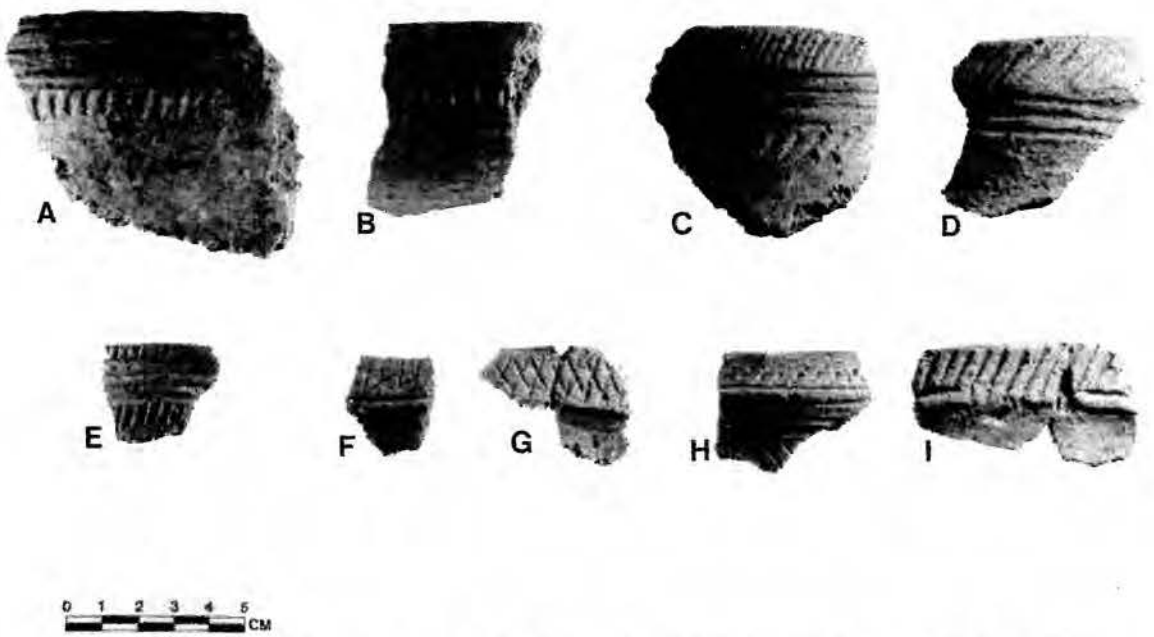

FIGURE 10.10: Middleport Substage Rim Sherds. A-B, E: Ontario Horizontal type; C: Black Necked type; D: Pound Necked type; F-G: Middleport Criss-Cross type; H-I: Middleport Oblique type. Courtesy of the the Museum of Indian Archaeology, London.

intermediate between earlier forms such as the Glen Meyer Triangular and Spurred types and the later prehistoric Neutral Nanticoke Triangular and Notched types (Pearce 1984:230), although qualitative data relevant to this hypothesis are not as yet available.

Rough and Ground Stone

The Middleport rough and ground stone assemblage also resembles that of the Uren substage, with the addition of two traits rarely found on Uren sites: sinew stones and netsinkers (J. Wright 1966:63).

Organic Artifacts

Most of the bone tools already enumerated for the Uren substage are also present in Middleport (Kapches 1981:107; J. Wright 1966:63). J. Wright (1966) suggests that the netting needle, cylindrical antler flaker and modified deer phalanges (cup-and-pin game variety) are most characteristic, while two new traits absent from Uren are also present: bear canine pendants and antler chisels.

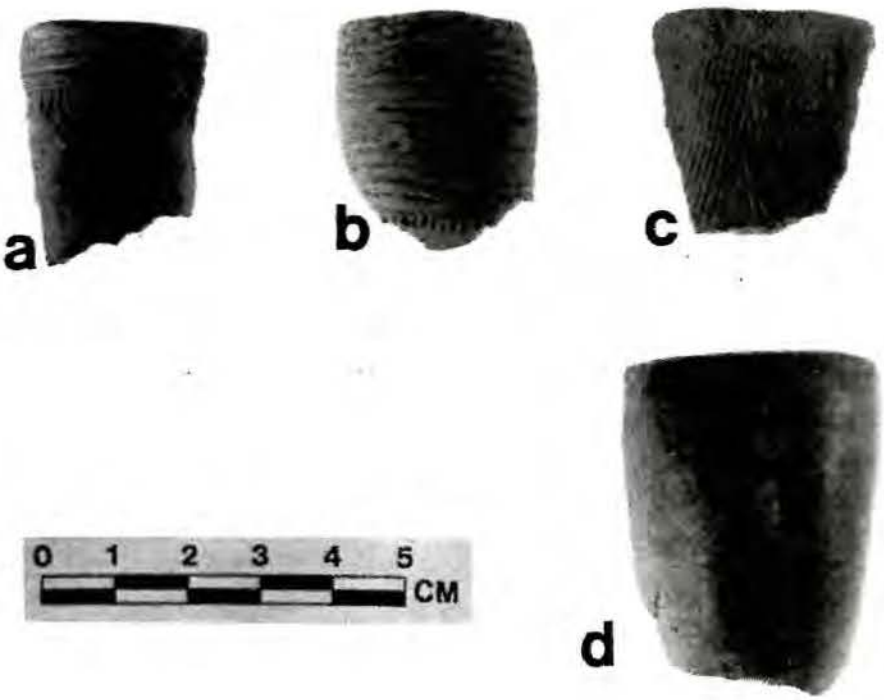

FIGURE 10.11: Middleport Substage Clay Pipes. A: Conical bowl with encircling horizontals; B: Cylindrical bowl with encircling horizontals; C: Conical bowl with complex zoned incising; D: Cylindrical plain bowl. Courtesy of the Museum of Indian Archaeology, London.

Settlement and Subsistence

Uren Settlement and Subsistence

Settlement

Sites dating to the late thirteenth and early fourteenth centuries have been interpreted as late Glen Meyer, late Pickering, early Middleport and, more rarely, Uren. Although cultural affiliation is disputed, there is little disagreement with the temporal placement of these sites, listed in Table 10.4. Therefore, sites dating ca. A.D. 1280-1330 are discussed as a unit irrespective of cultural affiliation.

Table 10.4 is a compilation of sites registered with the archaeological sites data base of the Ministry of Culture and Communications and is based predominately on preliminary survey results; hence, in several cases, cultural affiliation is tentative and undoubtedly further research will result in additions and deletions to the list.

Only four sites of this transitional period have had extensive excavations: Gunby (Rozel 1979); the Uren village type site (M. Wright 1986); Crawford (Jury 1948b); and the Willcock cabin site (Poulton 1985a). These excavations demonstrate that there are several differences between villages of the late thirteenth century and ancestral Glen Meyer and Pickering sites. These include changes in village size and layout, and longhouse length and internal organization.

FIGURE 10.12: Middleport Substage Projectile Points. A-B: Triangular projectile points; C-E: Side-notched projectile points. Courtesy of the Ministry of Transportation, Ontario.

Villages

Size and Location

The average size of villages in this sample of 20 is 0.9 to 1.0 ha. Each of the excavated Uren villages is 1.1 ha in size, approximately 0.6 ha larger than the average Early Iroquoian village (Dodd 1986). Based on physiographic (L.Chapman and Putnam 1966) and county soil maps data provided in Table 10.4, Uren villages are located predominately on, or adjacent to sand plains (9, 45%), followed by spillways (5, 25%), drumlinized till plains (4, 20%), clay plains (1, 5%) and till moraines (1, 5%). The preferred soil for the vast majority of Uren village locations is sandy loam or loamy sand (15, 75%), with a few situated on loam (3, 15%), clay loam (1, 5%), and gravely loam (1, 5%).

Village Plan

Two changes in village plan that first appear in the late thirteenth century are: parallel alignment of houses in closely spaced groupings; and reduction in the number of overlapping houses (Dodd 1984; Figure 10.13). The decrease in the number of overlapping houses, a characteristic of Early Ontario Iroquoian sites (Dodd 1984; Williamson 1985), suggests a shift from village abandonments and reoccupations over an extended period of time to more permanent year round settlements (Dodd 1986).

Some villages, such as Uren and Thomson, appear to be situated in naturally defensible locations whereas other village locations, for example Elliot, do not appear to have been chosen for defense. Palisades are not a feature of all Uren villages. Of the few excavated villages, Uren has up to seven rows of palisade, thought to indicate the need for defensive measures (M. Wright 1986:62), whereas the Crawford site (Jury 1948b) is not palisaded.

TABLE 10.4: Middle Ontario Iroquois Habitation and Burial Sites.

UREN AND OTHER LATE 13TH - EARLY 14TH CENTURY SITES

SITE	PHYSIOGRAPHIC REGION	SOIL TYPE	SIZE (ha)	TYPE	INQUIRY	SOURCES
Austin IV (BaGo-27)*	S/D	s		C	S	A. Roberts (1978)
Orono North (AlGp-7)	S	s	2.0	V	S	A. Roberts (1978)
Webb I (AlGs-78)	D	l	0.4	V	S	Poulton (1979a, 1979b)
Elliot (AkGt-2)	D	l		V	LE	Donaldson (1965), J. Wright (1966), Konrad (1973), Kapches (1981),
Tabor Hill (AkGt-5)	D	s		O	E	Churcher & Kenyon (1960), Konrad (1973), Kapches (1981), Molto (1983)
Thomson (AkGt-20)	D	l		V	LE	Emerson (1956c), Konrad (1973), Kapches (1981), Poulton (1987)
Barrie (BcGw-18)	S/D	s	0.8-1.2	V	LE	Ridley (1958b), J.V.Wright (1966), J. Hunter (1978)
Mystery (BcGw-32)	D	s	0.06	C	LE	Warrick (1988)
Mullet Pond (AjGw-71)	D	cl	0.4	V	LE	Lennox (1987b)
Gunby (AiGx-5)	S/W	s	1.1	V	E	Rozel (1979)
Laurenssen (AiGx-10)	W	s	1.6	V	S	Finlayson (1985b)
Jude Hay (AfGx-52)	C	c		H	S	Moerschfelder (1985)
Dead Goat Hill (AfGx-53)	C	c		C	S	Moerschfelder (1985)
Anderson (AfGx-54)	C	c		C	S	Moerschfelder (1985)
Murray Midden (AfGx-71)	C	c	0.3	C	S	Moerschfelder (1985)
Cayuga Quarry (AfHb-1)	S	s	1.5	V	S	Fox (1976)
Wooley	S	s		V	S	Fox (1976)
Ovington (AhHd-1)	W	s	0.8	V	S	Nixon (1976, 1986)
Walton (AhHd-46)	W	s	0.8	V	S	Nixon (1976, 1986)
Magda (AhHd-48)	W	s	0.4-0.6	V	S	Nixon (1977, 1986)
Port Royal (AdHd-4)	C	s		V+B	S	Fox (1976)
Klassen (AdHd-6)	C	s	0.2	H+B	S	Fox (1976)
Uren (AfHd-3)	S	s	1.1	V	E	Wintemberg (1928b), J. Wright (1966), M. Wright (1986)
Ash (AfHd-7)	S	s	0.4	H	S	Fox (1976)
Davis (AfHd-9)	S	s	0.3	H	S	Fox (1976)
Bonisteel (AfGu-2)	S	s		V	LE	Pengelly (1984, 1986), Pengelly and Pengelly (1987)
Downpour (AeHg-1)	S	s	0.4-0.8	V		J. Wright (1966)
Dorchester Village (AfHg-24)	W	gl	0.8-1.2	V	S	Keron (1981, 1984, 1986)
Willcock (AfHi-52)	W/T	gl	0.1	C	E	Poulton (1984, 1985a)
Sosad (AfHi-120)	W/T	s			LE	ASDB, Timmins pers. comm.
Crawford	S	s	1.1	V	E	Jury (1948b), Pearce (1984)
Smith (AhHk-1)*	S/C	s		C	S	ASDB
Byrnes (AgHm-1)	T	s		V	LE	ASDB, Lambton College (n.d.)

TABLE 10.4: (continued)

MIDDLEPORT SITES

SITE	PHYSIOGRAPHIC REGION	SOIL TYPE	SIZE (ha)	TYPE	INQUIRY	SOURCES
Frank Bay *	S	s	0.2	C	LE	Ridley (1954)
Wallbridge (BaGi-4)	C		1.5	V	S	Sweetman (1972)
Larmer (BaGo-1)	K	s		V	S	Hakas (1967), Ellis & Foster (1986)
Gibbs (BaGo-29)	S/D	s	0.8-1.2	V	LE	A. Roberts (1978), McKillop & Jackson (1985)
Lean (BcGq-2)	D	sl		V	S	Hakas (1967), Ellis & Foster (1986)
Pascoe (BaGr-1)	K			V	S	A. Roberts (1978)
Huff (AlGh-9)				V	S	Swayze (1973)
Harvey Pascoe (AlGr-10)*	D			V	S	A. Roberts (1978)
Waltham (AlGs-1)	S/D	s	1.2-2.4	V	LE	Konrad (1973)
F. Barkey (AlGs-4)	D	l	1.2-2.4	V	S	Konrad (1973)
Pearse (AlGs-29)	D	l	1.8-2.2	V+O	S	Poulton (1979a)
Hoar (AlGs-71)	D	l	3.0	V	S	Poulton (1979a)
Peter Webb II (AlGs-73)	D	l	1.2	V	LE	Poulton (1979a,b)
Milroy (AlGt-1)	D	l	1.0-3.0	V	LE	Donaldson (1962), J. Wright (1966), Konrad (1973), Konrad & Ross (1974), Kapches (1981)
Fairty Ossuary (AlGt-3)	D	l		O	E	Donaldson (1962), Anderson (1964), Molto (1983), MPP (1986)
Robb (AlGt-4)	D	l	1.2	V	LE	Donaldson (1962), J. Wright (1966) Konrad (1973), Konrad & Ross (1974), Kapches (1981), MPP (1986)
Woodland Park (AlGt-8)	D	l	0.5	C	LE	Konrad (1973), Konrad & Ross (1974), Ferri (n.d.), Kapches (1981), MPP (1988)
Sewell (AlGt-9)	D	l	1.0	H	LE	C. Reid (n.d.), MPP (1988)
Ken Reessor (AlGt-14)	D	l	1.2-2.4	V	LE	Konrad (1973), Kapches (1981), MPP (1986)
Faraday (AlGt-18)	D	l		V	S	Konrad (1973), Kapches (1981), MPP (1986)
New (AlGt-36)	D	l		V/H	LE	Kapches (1981), MIA (1986)
Sewell II (AlGt-47)	D	l	0.03	H	S	Konrad and Ross (1974), MPP (1988)
Hamlin (AlGt-60)	D	l		V	LE	C. Reid (n.d.), Konrad & Ross (1974), MPP (1988)
Russell (AlGt-162)	D	l			S	MPP (1988)
Macklin (AkGt-6)	D	l		C	S	Konrad (1973), Poulton (1987)
William Milne (AkGt-41)	D	l	1.0	V	S	MPP (1988)
Dykstra (BbGw-5)	D	s	0.3	H	S	Warrick (1986, 1988), Warrick & Molnar (1986)
Lougheed (BbGw-13)	D	s	0.6	V	S	Warrick (1986,1988),
Beswetherick (BcGw-1)	D	s	0.6	V	LE	Channen et al. (1963), Ridley (1973), J. Hunter (1978)
Gervais (BcGw-5)	D	s	1.6	V	S	Ridley (1966),J. Hunter (1976)
Sparrow (BcGw-8)	D	s	0.4	H	S	Ridley (1968), J. Hunter (1976)

TABLE 10.4: (continued)

MIDDLEPORT SITES

SITE	PHYSIOGRAPHIC REGION	SOIL TYPE	SIZE (ha)	TYPE	INQUIRY	SOURCES
Cundles (BcGw-11)	D	s	1.2	V	LE	Ridley (1970), J. Hunter (1978)
Partridge (BcGw-12)	D	s	0.6-1.2	V	LE	Ridley (1966), J. Hunter (1978)
Cowan (BcGw-13)	D	s	0.4	C	S	Ridley (1973), J. Hunter (1978)
Little I (BcGw-15)	D	s	1.5	V	S	J. Hunter (1976), Warrick (1986)
Wiacek (BcGw-26)	D	s	0.7	V	E	Lennox et.al.(1986)
Little II (BcGw-28)	D	s	0.5	V	S	Warrick (1986, 1988), Warrick & Molnar (1986)
Kenney (BcGx-15)	T	s	0.8-1.2	V	LE	Ridley (1968), Hunter (1976)
John Thompson (BdGw-11)	D	s	2.4	V	LE	ASDB
Flos #9 (BdGx-7)	C	s	1.2	V	S	Ridley (1966), Hunter (1976)
McRae (BdGx-12)	S	s	1.6	V	LE	Ridley (1969)
BdGx-13	S	s	1.9	V	LE	Ridley (1973)
Gratrix (BeGw-6)	S/D	s	0.5		LE	Ridley (1971)
Laura Potter (BeGw-8)	D	s	1.2	V	LE	Ridley (1969)
Crawford Lake (AiGx-6)	L	l	1.6	S	E	Finlayson & Byrne (1975), Poulton (1983)
Rife (AiGx-7)	L	l	1.4	V	LE	Finlayson (1985b), D. Smith (1986)
Van Eden (AiGx-8)	L	l	1.0	V	LE	Finlayson (1985b), D. Smith (1986)
Unick (AiGx-11)	L	s	1.0	V	LE	D. Smith (1986)
Pipeline (AiGx-12)	L	cl	0.8	V	LE	Busby (1979), D. Smith (1987)
Chypchar (AiGx-73)	L	l	0.4	H	LE	Finlayson (1983), D. Smith (1981)
Crawford Lake II (AiGx-89)	L	l	0.2	H	LE	Finlayson (1984)
H & R (AiGx-91)	L	s		V	LE	Finlayson (1984)
Winking Bull (AiHa-20)	L	l	0.8	V	LE	Finlayson (1986)
Scott (AhHc-8)	T	sl		V	S	Nixon (1986)
Ritchie (AhHc-9)	W/T	sl			S	Nixon (1986)
Mitchell (AhHd-2)	W	l		V	S	Nixon (1986)
Stevenson (AhHd-4)	W/K	s	0.9	V	S	Nixon (1986)
G. Smith (AhGx-14)	C	sl		V/H	S	ASDB
Olmstead (AhGx-32)	T	sl	1.5	V	S	Williamson (pers. comm 1989)
Ben Soules (AgGx-6)	C	sl	0.4	H	S	ASDB
Moffat (AgGx-7)	C	sl		V	S	ASDB
S. Brigham (AgGx-63)	C	sl	1.5	V	S	ASDB
Middleport (AgHa-2)	C	s	2.0	V	LE	Wintemberg (1948), J. Wright (1966), S. Jamieson (1986), Ambrose (1987)
Road Side (AgHa-41)	C			V	S	Boyer (1982)
Sharp (AgHb-9)	S				S	Stothers (1974)
Hunt (AgHb-11)*					S	Stothers (1974), Boyer (1982)
Salt Springs (AgHb-16)*	S				S	Stothers (1974)
Cooper (AgHb-18)*	S	s		C	LE	Warrick (1982, 1984b)
Cranberry Creek (AfGv-62)*	S	s		C	LE	Lennox n.d., Stothers (1974)
Parson's Knoll (AfGx-41)*	C	c			S	Stothers (1974)

TABLE 10.4: (continued)

MIDDLEPORT SITES

SITE	PHYSIOGRAPHIC REGION	SOIL TYPE	SIZE (ha)	TYPE	INQUIRY	SOURCES
Daisy (AdHb-1)*	P	m		C	S	Fox (1986a)
Water Nymph (AdHb-2)*	P	m		C	S	Fox (1986a)
AdHb-4*	P	m		C	S	Fox (1986a)
Little Ridges Creek (AdHa-6)*	P	m		C	S	Fox (1986a)
Vanessa (AfHc-3)	S	s	0.6	H	S	ASDB
Reid (AdHc-5)	S/C	s	1.0	V	LE	M. Wright (1978)
DePlankie (AeHe-14)	S/C	s		V	S	Poulton (1980)
Doug Dennis (AeHe-16)	S	sl		V	S	Poulton (1980)
Pineo I (AdHg-1)	S	l	0.1	C	S	Connoy (1979)
Ferguson (AeHg-4)	C	l		V	S	Connoy (1979), Poulton (1980)
DeCraemer (AeHg-52)	S	l	0.1	C/H	S	Poulton (1980)
Brooymans I (AeHh-7)	S	sl		C	S	D. Smith (1979)
Brooymans II (AeHh-9)	S	s	0.1	C	S	D. Smith (1979)
Pederson I (AdHi-3)	S	s	0.5	V	S	D. Smith (1978)
Pederson I (AdHi-13)	S	s	0.1	C	S	Connoy (1979)
John E. Pearce (AdHi-16)	S/C	s	0.3	H	S	ASDB
Drumholm (AfHi-22)	S	s	2.8-3.2	V	S	Pearce (1982, 1984)
Edwards (AfHi-23)	S	s	2.8-3.2	V	LE	Pearce (1982, 1984)
Smith (AhHk-1)*	S/C	s		C	S	ASDB
Frank Bay *		s	0.2	C	LE	Ridley (1954)
Inverhuron (BbHj-3)*	S	s		C	LE	W. Kenyon (1959), J. Wright (1966), T. Lee (1960)
Nodwell (BcHi-3)	S	s	1.0	V	E	J. Wright (1974)
Davey (BeHa-11)	S	s	6.0	V	S	ASDB
Methodist Point (BfHa-2)	S	s		C	LE	S. Smith (1979)
Fulford (BdHc-2)	S	s		C	S	Garrad (1986)

INDETERMINATE MIDDLE IROQUOIAN SITES

McMillan (BaGv-8)*	C	cl		C	S	Prideaux (1977)
Bristow (BcGt-1)*	L	m		C	S	Sweetman (1967), Ellis & Foster (1986)
Corin's (BcGt-2)*	L	l		C	S	Sweetman (1967), Ellis and Foster (1986)
Dougall (BdGu-2)*	S	s		C	S	J. Wright (1972b)
Markson (BbGs-11)	K	s		V		ASDB
Bella Vista (AkGs-10)	C	l			S	MPP (1988)
Archie Little (AkGt-17)	D	l	0.4-1.2	V	S	Konrad and Ross (1974), MPP (1988)
Jacques I (AkGt-34)	D	l	0.3	H	S	MPP (1988)
Maletin I (AdHj-3)	S	s	0.1	C	S	Connoy (1981)
Volkaert VIII (AdHj-17)	S	s		C	S	Connoy (1982)
Jones III (AdHh-7)	S	s			S	D. Smith (1978)
Cook (AeHg-10)	T	l		V	S	Poulton (1980)

TABLE 10.4: (continued)

INDETERMINATE MIDDLE IROQUOIAN SITES

SITE	PHYSIOGRAPHIC REGION	SOIL TYPE	SIZE (ha)	TYPE	INQUIRY	SOURCES
Knowles II (AeHg-12)	T	l		C/H	S	Poulton (1980)
Maciulus (AeHg-18)	S	s	3.0	V	S	Poulton (1980)
Frank Zavitz (AeHg-19)	T	l	1.5	V	S	Poulton (1980)
Charles White I (AeHg-20)	S	s	4.0	V	S	Poulton (1980)
McLorne II (AeHg-31)	T	l	3.0	V	S	Poulton (1980)
Kishimoto (AeHg-40)	S	s	2.6	V	S	Poulton (1980)
G. Van Patter II (AeHf-19)	T	s	2.0	V	S	Poulton (1980)
Carrel (AeHf-22)	S/C	s	2.0	V	S	Poulton (1980)
Reynaert (AeHf-31)	S	s	0.2	C/H	S	Poulton (1980)
Dickhout (AeHf-35)	T	s		V	S	Poulton (1980)
Vieraitis (AeHe-11)	T	cl		V	S	Poulton (1980)
Jvaskyla (AfHa-58)	C	cl		C	S	ASDB
Metcalfe (AfHk-7)	S/C	s	2.8-3.2	V	S	ASDB, Haggerty pers. comm.

Key to symbols:

* multicomponent site

Physiographic Regions

S sand plain
D drumlinized till plain
B bevelled till plain
K kame moraine
P peat and muck
L limestone plain
W spillway
T till moraine

Soil Type

s sandy loam/loamy sand
c clay
cl clay loam
sl silty loam
gl gravelly loam
m marsh

Site Type

V village
C camp/cabin
H hamlet
O ossuary
B burials

Extent of Inquiry

E excavated
LE limited excavation
S visual survey/test pitting

Sources

ASDB Archaeological Sites Data Base borden forms

Non-village Settlements

While there are reports of hamlets associated with the Uren site (Fox 1976:170; M. Wright 1986:11), none, as yet, have been excavated. Willcock, a seasonally occupied site on a sand knoll on the west edge of the City of London, is the only Uren cabin site excavated to date. The Willcock site consists of one longhouse measuring 23 x 7 meters and three deep, stratified middens. The site was not palisaded (Poulton 1985a).

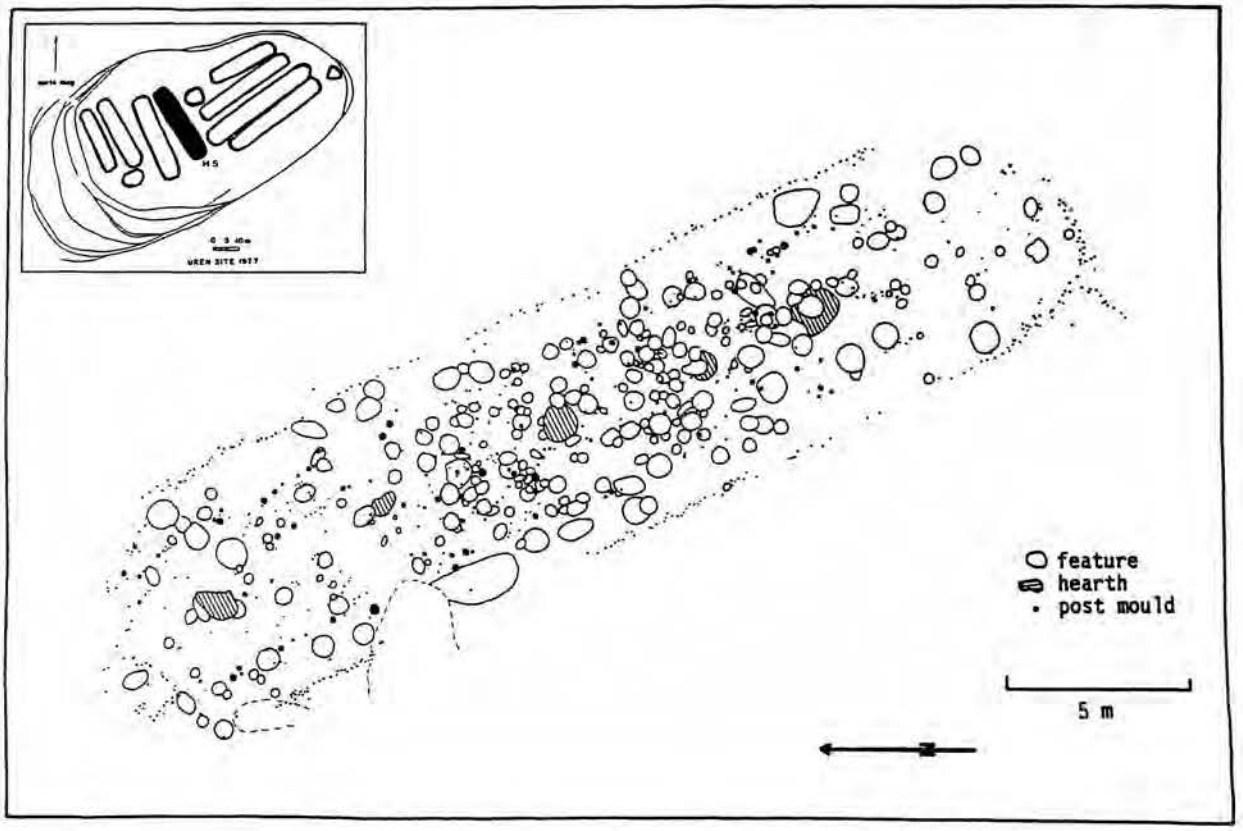

FIGURE 10.13: Plan Map of Uren Substage Longhouse, Uren Site.

Longhouses

The classic long "cigar shaped" longhouses first appear early in the fourteenth century (Figure 10.13) and at this time there is a substantial increase in house length. Early Iroquoian houses (n=48) average 12.4 meters in length with a deviation of 4.5; while longhouses (n=13) of the early fourteenth range in length from six to 45 meters, with a mean of 27.9 and a standard deviation of 15.9 meters, roughly twice the length of the preceding Early Iroquoian houses.

Uren longhouses contain centrally aligned hearths with numerous associated features and post moulds. The density of features, interior house posts and house wall posts are greater than in Glen Meyer and Pickering houses (Dodd 1984:275), with an average of 0.63 features and 1.47 posts per square meter (n=7). In addition, most Uren houses have clearly defined end storage cubicles.

Subsistence

Hypotheses on subsistence patterns derive mainly from the interpretation of settlement data. Increasing reliance on corn cultivation has been cited as the reason why living in larger villages became feasible (Trigger 1985:99). The distribution of Uren villages and campsites has been used to suggest a seasonal round of winter occupation of the villages and spring-fall occupation of hunting and fishing camps (M. Wright 1986:54).

Fecteau (1985:169) has noted that the period from A.D. 1300-1400 shows the greatest increase in the number of cultigen yielding sites. Gunby, an early fourteenth century site, is the earliest village to contain all five cultigens: corn, beans, squash, sunflowers and tobacco (Fecteau 1985:169).

Analysis of Uren and Gunby faunal assemblages suggest mammals were the primary source of protein (Rozel 1979:109; M. Wright 1986:56) whereas the Thomson and Elliot collections are composed primarily of fish (Kapches 1981). In all cases white tailed deer was the most frequently identified mammal species; other mammals include: squirrel, dog/wolf, beaver, bear, and muskrat. The predominate fish species identified are bullhead, perch, bass, pike, and bowfin. Passenger pigeon is the most frequently recovered species of bird.

Middleport Settlement and Subsistence

Settlement

Middleport sites are listed in Table 10.4. Again it should be stressed that this table is based mainly on survey information and subject to revision. As Table 10.4 indicates, significantly more Middleport than Uren sites have been documented. J. Wright (1966:59) attributes this rise to an increase in population. The larger number of Middleport sites is, in part, also a reflection of the greater time span of the Middleport substage; the hesitancy of many researchers to identify sites as Uren rather than late Pickering or Glen Meyer or early Middleport; and the hazy boundary between late Middleport and early late prehistoric Neutral and Huron sites.

Although there are 93 Middleport sites reported, only four have produced substantial settlement pattern data: the completely excavated, well-documented Nodwell site (J. Wright 1974); the almost completely excavated Crawford Lake site (Finlayson and Bryne 1975); the terminal Middleport Wiacek site (Lennox et al. 1986); and the multicomponent Glen Meyer/Middleport Reid site (M. Wright 1978). Of these, full data are available on all but the Crawford Lake site: a final report on the research in that area and that site is in preparation (W. Finlayson pers. comm. March 3, 1990). Marked changes in settlement patterns witnessed during the transition from terminal Early Iroquoian to initial Uren substage are not apparent in the transition from Uren to Middleport. Instead, differences, such as increases in village size and longhouse length, seem to reflect gradual changes in an already defined pattern.

Villages

Size and Location

Based on Table 10.4, there appears to be a slight shift in village location; the majority of Middleport villages are on drumlinized till plains (23, 41%), followed by sand plains (12, 21%), clay plains (8, 14%) and limestone plains (6, 11%). Unlike Uren sites few Middleport villages are located in spillways (2, 4%), and there are still few sites on till plains (3, 5%) or kame moraines (2, 4%). Villages are located predominately in areas of sandy loam soil (28, 54%), although there is an increase in the number of sites on loam (16, 31%), silty loam (7, 14%) and clay loam (1, 2%).

The excavated sample of Middleport villages are 1.1 ha in size but survey data on unexcavated sites suggest village size may average 1.5 to 1.7 ha, slightly larger than Uren villages. There are reported to be extremely large Middleport sites of ca. 2.8 to 3.2 ha thought to represent the amalgamation of smaller communities for purposes of defense (Finlayson 1985a:439; Pearce 1984:269). However, these estimates are based on surface distributions which, as in the case of the Uren site (M. Wright 1986:62), often prove to be inflated; and the extreme size inferred for these sites would appear to be anomalous.

Village Plan

As in the Uren substage, longhouses are aligned in parallel groups of two or more houses (Figure 10.14). The Nodwell site is the best example of this arrangement.

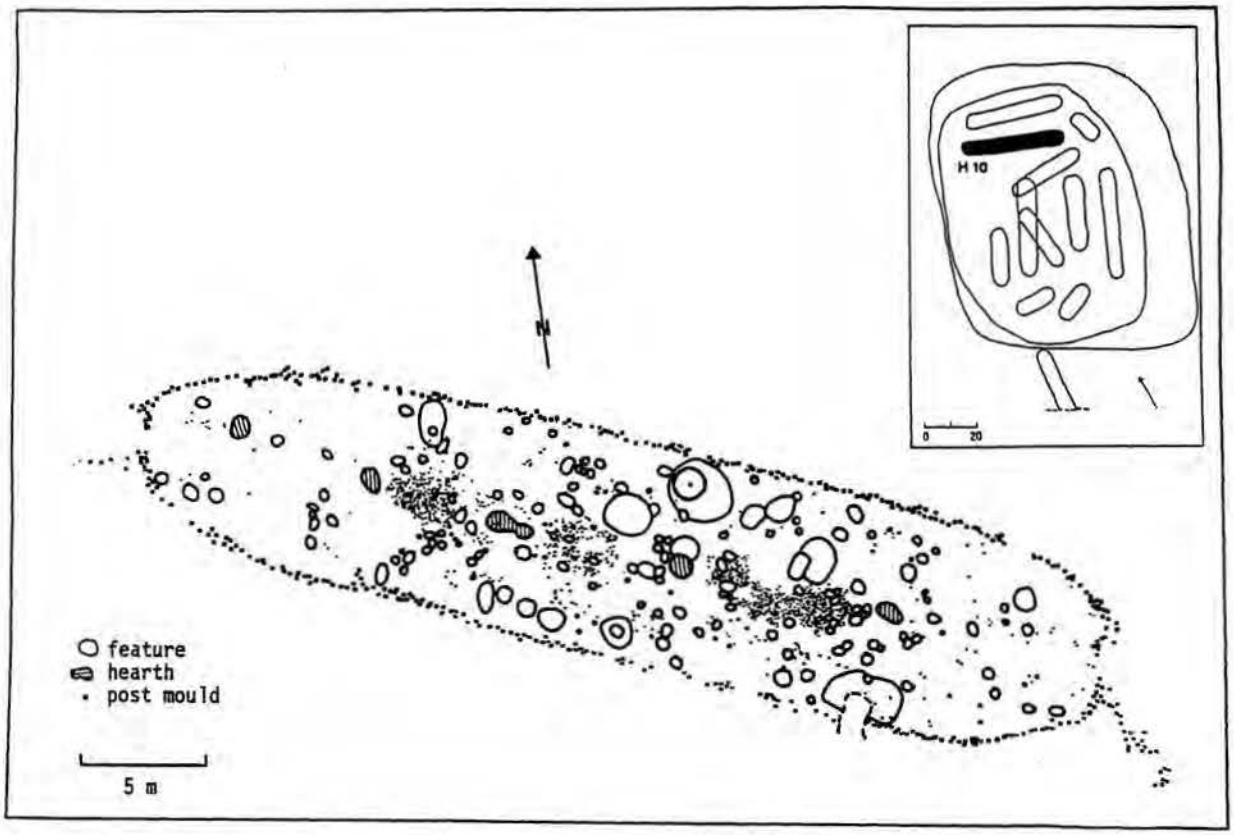

FIGURE 10.14: Plan Map of Middleport Substage Longhouse, Nodwell Site. Redrawn after J. Wright (1974).

Some sites occupy naturally defensible locations (e.g. Hoar, Pearse) while other villages display no apparent concern for defense (e.g. Webb II, Wiacek, Kenney). The Nodwell site is surrounded by a double row palisade. However, of the few extensively excavated Middleport villages, Wiacek is not palisaded and it remains to be seen if palisaded villages were the rule. Sites surrounded by earthworks (e.g. Pound, Lawson) are a phenomena of the Late Iroquoian period and are not documented for Middleport.

Non-village Sites

There are special purpose hamlets, cabin and camp sites associated with Middleport villages (J. Wright 1974:302). They range in size from 0.1 to 0.6 ha. Numerous Middleport campsites have been reported, of which many are multi-component. Indeed, some have been re-occupied over the course of several thousand years. Very little has been documented on these sites. Methodist Point is thought to have been used as a "terminus for canoe routes while on trading, fishing and raiding expeditions" (S. Smith 1979:55), and Inverhuron is thought to be a seasonally occupied fishing camp (W. Kenyon 1959; S. Stewart 1974).

No Middleport cabin sites have yet been excavated, although sites interpreted as cabins have been reported from a number of areas, such as the Lower Rouge River drainage of Toronto (MPP 1988). The nature of subsistence activities carried out at these cabins remains to be determined, as does the geographic range of the cabin as a settlement type.

Recently, Finlayson and Pearce (1989) have hypothesized that the Crawford Lake site was a satellite for two or three successive villages. Accordingly, the site is viewed as a long-term, year-round but not necessarily continuous occupation, dependent upon the nearby village(s) for defence. This interpretation is somewhat akin to the "capital-satellite village model" originally hypothesized by Lennox (1981, 1984a, 1984b) for the historic Neutral in the area west of Crawford Lake (Finlayson and Pearce 1989:303). Further consideration of the hypothesized satellite function of the Crawford Lake site must await detailed inter-site and intra-site comparative analyses, excavations, and dating of the site and the villages with which it is believed to relate.

Longhouses

Based on a sample of 18 longhouses, Middleport houses average 33.1 meters in length with a range of 12 to 45 meters and a standard deviation of 11.7 meters (Figure 10.14). Middleport houses are, on average seven meters longer than their Uren predecessors. This is a more gradual expansion than the increase observed in the transition from Early Iroquoian to Uren.

The internal arrangement of Middleport houses follows the pattern established for Uren houses, with high densities of features and interior post moulds. Middleport feature density is 0.52 features per meter square (n=11) and interior house post density is 2.90 posts per meter square (n=10). Indeed, feature and post densities for the entire Middle Iroquoian period are greater than they are for either Early or Late Iroquoian houses. This suggests prolonged village occupation during Uren and Middleport times (Dodd 1984:298).

Sites dating to ca. A.D. 1400-1450, for example, Moyer, Slack-Caswell and Campbell have been identified as both Middleport and Late Iroquoian Prehistoric Neutral by different researchers (e.g. S. Jamieson 1979; D. Smith 1987). However, longhouses of this time do not conform to the Middleport pattern: they are longer than at any other time in the Ontario Iroquoian Tradition (Dodd 1986), averaging 47.8 metres in length with a standard deviation of 30.2 (n=24); they have double the number of extensions/contractions (Dodd 1986); and contain numerous semi-subterranean features that have been interpreted as sweat lodges (R. MacDonald 1986) or earth ovens (Finlayson and Matson 1974). These differences are supplemented by differences in material culture, notably in high frequencies of trumpet pipes and Pound/Black Necked pottery types, and decreasing frequencies of Middleport Oblique and Ontario Horizontal pottery types. All of these factors combine to recommend that the aforementioned sites of the early fifteenth century be considered as a separate and distinct manifestation of the Late rather than Middle Ontario Iroquoian stage.

Subsistence

Dietary trends during Middleport suggest a subsistence economy based on increasing reliance on corn and bean cultivation (Kapches 1981; Pearce 1984:292), and intensive exploitation of locally available land and water species (S. Jamieson 1979:127-128; Lennox et al. 1986:111; McKillop & Jackson 1985:27).

White-tailed deer is an important dietary supplement on many but not all sites. It has been suggested that deer would be more prevalent on later sites in areas containing a sequence of cleared and abandoned fields (Kapches 1981:231) than on "frontier" sites in areas of primary forest (Lennox et al. 1986:121). Alternatively, D. Smith (1987:494) suggests there was differential access to scarce resources such as deer among contemporaneous agricultural communities in the vicinity of Crawford Lake which resulted in social and economic tension, expressed in pipe styles. However, analyses of faunal remains from sites in the Crawford Lake area are few and preliminary (Burns and Heathcote 1974). Obviously, more faunal analyses will have to be undertaken before a pattern for Middleport subsistence emerges.

Burial Patterns

A total of 14 sites have produced human remains worthy of discussion in the context of burial patterns. Exactly half pertain to the Uren substage, while the remainder pertain to the Middleport substage.

Uren Burial Patterns

Only two of the seven Uren sites with human remains are located in southcentral Ontario: the Tabor Hill ossuaries and the Thomson village in Metropolitan Toronto. The remaining sites are all located in southwestern Ontario: the Bonisteel site near Port Colbourne; and the Uren, Port Royal and Klassen sites, north of Long Point.

These sites illustrate a variety of multiple secondary burial modes up to and including true ossuaries. While there is no standard definition of an ossuary which can be applied to this range, three basic categories may be distinguished for purposes of description: multiple interments, of up to several individuals; small ossuaries, containing from 10 to a few dozen individuals (bundle, articulated or both); and large ossuaries, with up to several hundred individuals or more.

Tabor Hill comprised two adjacent burial pits which contained an estimated total of 523 individuals. Most were disarticulated, but several discrete bundle burials as well as two cremations were also present (Churcher and Kenyon 1960; W. Kenyon 1956). Although no diagnostic artifacts were recovered during excavation, it has been inferred by W. Kenyon (1956:184) and Emerson (1956c:184) that the Tabor Hill ossuaries were related to the Thomson site, 2 km distant. This inference is based on the absence of any other known village site within a radius of several miles (Kenyon and Churcher 1960:253). It must be stressed, however, that the association between the two sites and the concomitant placement of Tabor Hill in the Uren substage both remain speculative, and it is possible that one or more other undocumented candidate village existed but were destroyed by subdivision development(s) then rampant in the area. Boyle (1896b:23), Clark (n.d.) and A. Hunter (n.d.:Site 22) have reported burials for the Thomson village itself (Poulton 1987).

It is obvious that little can be said on the subject of Uren burial patterns in southcentral Ontario on the basis of only two sites. However, Tabor Hill does constitute what has been hypothesized to be the earliest well-documented example of a large ossuary, and as such would appear to be intermediate to the somewhat earlier small ossuaries of the Pickering Branch and the slightly later common burials of the Middleport substage such as the Fairty Ossuary (see below).

The evidence for Uren substage burial patterns in southwestern Ontario is best known through investigations in the vicinity of the Otter and Big Creek drainages north of Long Point. Fox (1976:169-172, 1984e, 1988) had suggested that the Early Ontario Iroquoian burial pattern in this region included the exhumation of primary burials from hinterland village sites, and the re-burial of those remains in seasonally occupied sites oriented to the spring-summer exploitation of resources around Long Point Bay and possibly at the mouths of creeks on Lake Erie and this may have continued in Uren.

The Uren type site (J. Jamieson 1978; M. Wright 1986) is the only excavated example of the inland village part of this pattern. Teeth and small bones were recovered from pits in house ends and under bunklines. These occurrences were interpreted as the residue of primary burials exhumed for re-burial elsewhere (M. Wright 1986:17). Longbones and flat bones with cut marks were recovered from three large stratified interior house pits, and were interpreted as possible evidence of torture and cannibalism (M. Wright 1986:18; J. Jamieson 1978:11). Alternatively, cut marks may have been produced during preparation of the bodies for bundle burials.

The only definite burial at Uren consisted of the bones of three individuals in a bunkline pit, interpreted as a secondary interment of individuals excluded from normal reburial practice due to their ages or modes of death (M. Wright 1986:19). Other aspects of this pattern are represented at the Port Royal site near Long Point, where two burial areas were discovered (Fox 1976; pers. comm. 1988). One, across the creek from the site, contained a multi-

ple bundle burial consisting of four incomplete individuals. The other, within the site, included two separate bundle burials. The nearby Klassen site has produced surface indications of similar burials. In addition, limited evidence has been documented on one other site in the region: and a secondary burial of parts of two infants and an adult at the Bonisteel site (Pengelly and Pengelly 1986; Spence n.d., pers. comm.).

Middleport Burial Patterns

Four of the seven Middleport sites containing human remains are located in southcentral Ontario: the Fairty and Pearse ossuaries, near Toronto; and the Lougheed and Wiacek sites in Simcoe County. Another, the Crawford Lake site, is situated on the Niagara Escarpment near Milton. The remaining two are in southwestern Ontario: the Middleport site, near Brantford; and the isolated, northern village of Nodwell, in Port Elgin. Modern or scientific excavations recovering burial data have been conducted on all but the Pearse Ossuary.

The Fairty Ossuary, near Markham, is the only definite example of a large ossuary in the Middleport sample. It contained a minimum of 512 individuals (Anderson 1964), and is believed to be associated with one or both of two village sites situated within one kilometer: the Robb and Faraday sites (Donaldson 1962c:18; MPP 1986:110; J. Wright 1966:61). The Pearse Ossuary, located in Pickering, was partially destroyed by gravel pitting decades ago. A limited surface examination of a groundhog burrow recovered bones from a minimum of six individuals from what is presumed to be part of the original deposit (Poulton 1979a; Williamson 1977). This ossuary is located within a village of the same name, and is situated just 600 meters from a second Middleport village. Of the two sites in Simcoe county, Wiacek produced human teeth from three features, interpreted as the remains of primary burials which had been exhumed (Lennox et al. 1986:113), while Lougheed yielded bone from plough-disturbed burials (Christie and Warrick 1986b).

Within southwestern Ontario, a small ossuary reported from the Middleport site (Wintemberg 1948:38) is said to have contained over 25 skulls (Knowles 1937; Molto 1983). This ossuary probably relates to the Middleport substage village, although it must be noted that the site includes a Princess Point component (see Fox: this volume). Limited excavations on the village itself uncovered a flexed primary burial of a middle-aged male (Ambrose 1987:8; Saunders 1986b).

A multiple secondary interment was located near the Nodwell village. It consisted of a pit containing the remains of five individuals: an adult male and four children below the age of six. The adult and three of the children were disarticulated: the remaining individual was an infant in a pot (J. Wright, cited in Kapches 1976:33). Five pits in two longhouses at the Nodwell village contained human remains (J. Wright 1974:87-88), including a tooth and a few hand and foot bones, possibly representing the remains of exhumed primary burials; and the bones of most of an articulated right leg and left foot. The latter occurrence has been interpreted as either the remains of a disinterred primary burial, a plough disturbed burial, or evidence of cannibalism (J. Wright 1974:87).

The Crawford Lake site is unusual in that it is the only reported Middleport site which is known to contain a number of definite burials. Most are single interments of infants and children in interior house features. Two of these are primary flexed burials (Finlayson and Matson 1974:16-18; Poulton 1983:13), one of which (Poulton 1983) was found in a support post mould. Another of these was cremated and occurred with the charred left and right hand bones of an adult (Poulton 1983:13). Yet another is incomplete and largely disarticulated and occurred with a cremated adult digit (Finlayson and Matson 1974:19). The latter burial was missing the skull and most long bones and may represent elements excluded from a secondary inhumation. The same interpretation may apply to the incomplete remains of an adult male in a bunk row feature (Poulton 1983:13). The only other burial reported for Crawford Lake was an adult female with what was interpreted as evidence of torture (Finlayson, cited in Kapches 1976:35). Finally, one pit contained the articulated bones of an adult lower left arm and hand (Finlayson and Matson 1974:20).

The only remaining Middleport site with burials is the multicomponent Reid village, where excavations revealed two multiple secondary interments (M. Wright 1978, 1986). These graves, however, have been attributed to the late Glen Meyer component of the site (Saunders and MacKenzie-Ward 1988:21).

It difficult to draw any definite conclusions with regard to Middle Iroquoian burial patterns given that only five of the 14 sites have had both extensive excavation and final reporting (Uren, Tabor Hill, Fairty, Nodwell and Wiacek). Nevertheless, certain patterns are evident. It has long been recognized that there are significant differences between the Iroquoian burial patterns of southcentral and southwestern Ontario, notably in the development, occurrence and prevalence of ossuary burials. Johnston (1979:96-97) has observed that multiple secondary burials and small ossuaries in the Pickering Branch gave rise to large ossuaries in the Middle Iroquoian period, a practice which reached its developmental climax among the historic Huron. A different evolution of burial practices has been inferred for the west, with a virtual lack of multiple interments and ossuaries among the Glen Meyer and later Middle Iroquoians, and rare exceptions explained as the possible result of eastern influences (Johnston 1979:99). The differences in burial patterns between east and west have been viewed as one indication of the divergent lines of development which culminated in the historic Huron-Petun and Neutral (J. Wright 1972a:74; J. Tuck 1971:323; Johnston 1979:98-99). Data reviewed here support the broad outlines of the above, although, the evidence suggests some need for revision of the particulars.

With respect to southcentral Ontario, the data suffer from the fact that only one village, Wiacek, has had extensive excavation. Furthermore, the relatively low number of ossuaries is disturbing given the assumption that this was the normal burial practice. For example, there are only three known Middle Iroquoian ossuaries compared to some 11 definite villages in the Toronto area, with a similarly low frequency of ossuaries among the Southern Division Huron in general, and no known ossuaries among the Huron of the Trent Valley. This suggests either that only those ossuaries outside of Huronia were generally deep enough to escape accidental discovery, so that large numbers of ossuaries await discovery in some parts of the region, or that ossuary burial was not necessarily the normal mode of interment among the Middle Iroquoian peoples and later Huron in all areas of southcentral Ontario.

The data base for southwestern Ontario is also fragmentary, with the only extensively excavated and reported villages being Uren and the isolated Nodwell site. Large ossuaries are indeed essentially absent throughout the Iroquoian sequence in this region. However, multiple secondary burials of a small number of individuals, comparable to those of the Pickering Branch, are present throughout the sequence, contrary to Johnston (1979:98) and Pearce (1984:353). For the Glen Meyer these include two in-house burials at Reid (seven and five individuals respectively), as well as a previously unreported burial of four individuals about 150 meters across a creek from the Stafford site (Glen Howe, pers. comm. 1980). The Uren substage offers a similar example to Stafford in the common burial of four individuals near the Port Royal site, while the Middleport substage has the multiple burial of five individuals near Nodwell. Such multiple secondary burials may represent familial interments (Saunders and MacKenzie-Ward 1988), or merely the remains of those who died about the same time (M. Spence, pers. comm. 1988).

Finally, examples of small ossuaries prior to the historic Neutral are more exceptional but also present in southwestern Ontario. Apart from the Middleport site ("over 25 skulls"), there are two. One, the Luton site, near St. Thomas, included a common burial with "about 25 skulls" (Anderson 1903:79-81), associated with a prehistoric Neutral village (T. Lee 1952:65). The other, the Orkney Crescent Burial in London, was excavated in 1989. It contained a minimum of 26 to 28 individuals in the form of secondary interments, primarily represented by long bones and crania (Paul Antone, pers. comm., April 19, 1990). These small ossuaries may represent the common graves of those of a given village who had died in a single year, in contrast to the historic Huron and their ancestors of southcentral Ontario who carried out large ossuary interment only upon village abandonment (M. Spence, pers. comm., April 19, 1990).

Precise data concerning village-burial relationships are not available for several of the small ossuaries and multiple interments of southwestern Ontario, but available data indicate that such burials may frequently, even usually, be located well outside the habitation limits. In consequence, such burials may be far more common than the literature suggests. In particular, the occurrence of common multiple secondary interments would appear to be a continuous practice throughout the Iroquoian sequence of the region. This pattern reflects a key aspect of historic Neutral burial practices: "that some importance was placed on maintaining the integrity of individuals after death...in contrast to the deliberate mixing of large number of incomplete secondary remains in the large Huron ossuaries" (Johnston 1979:96). In short, it is possible that the people of a given village in southwestern Ontario

celebrated and confirmed their communal or group identities through somewhat different mortuary rituals and practices.

Synthesis and Conclusions

As summarized earlier in this chapter, the Middle Iroquoian stage formed the centerpiece of J. Wright's Ontario Iroquoian Tradition. This hypothesized cultural stage consisted of two sequential substages: Uren, representing the fusion of the Glen Meyer and Pickering branches of the Early Iroquoian stage; and Middleport, a homogeneous cultural horizon which gave rise to the Huron, Petun, Neutral and Erie of the Late Iroquoian stage. Although subsequent researchers have generally proposed and employed somewhat different schemes in describing this period of prehistory, it is the opinion of this study that Wright's construct is useful as a framework for discussing certain differences and developments which would otherwise be masked.

The Uren Substage (ca. A.D. 1280-1330)

The transition from the Early to Middle Iroquoian stages in the late thirteenth century marks the inception of the Uren substage. As reviewed earlier in this chapter, and discussed in more detail by Williamson (this volume), the hypothesis proposed by J. Wright (1966) of a Pickering conquest of Glen Meyer has been widely questioned as a viable explanation for the Uren substage. Subsequent researchers have supported J. Wright's view that the Uren substage represents an in-situ development from late Pickering in southcentral Ontario, but have argued that a similar continuum from late Glen Meyer applies in southwestern Ontario (Kapches 1981; Pearce 1984; Poulton 1985a; Sutherland 1980).

It is inferred that the Uren substage began in the latter half of the thirteenth century, and that it spanned a total of roughly 50 years, ca. A.D. 1280-1330. Considerable overlap exists in the range of Uren radiocarbon dates with those of late Early Iroquoian and Middleport sites, a phenomenon which may suggest that the time span of the substage was somewhat different in different areas, or which may equally reflect the problems and imprecisions of the dates themselves.

With regard to site distributions, little attention has been focused on the question of J. Wright's (1966:53) hypothesis of an expansion of Middle Ontario Iroquoians across the Niagara River into western New York state, represented at the Oakfield and Kienuka sites, attributed by J. Wright to the Uren and Middleport substages, respectively. Data presented by J. Wright (1966:62, 155) indicate that these sites have relatively low coefficients of similarity with Ontario sites. Moreover, the rim sherd samples from Oakfield and Kienuka include substantial frequencies of "miscellaneous" types (46% and 30%, respectively), and the Kienuka rim sample in particular compares poorly with Ontario sites, with only half of the combined frequency of typical Middleport types. These considerations are supported by other dissimilarities between the fourteenth century sites of the two areas. In short, it appears that the similarities between these sites and those in Ontario have been over-stressed at the expense of their differences, and that the hypothesis of an expansion of early Middle Ontario Iroquoian peoples into New York State requires much further study.

The foregoing review is useful only in a broad sense, as the available data are not really sufficient to permit any truly detailed study of temporal or regional variation within the material culture of the Uren substage. In reality, our current knowledge of the matter is subject to any number of limiting factors, not the least of which has been a bias toward ceramic analyses, often to the exclusion of other artifact classes. Additional potential problems derive from the fact that there are only two sites with large and fully analyzed artifact samples from extensive excavations, both located in southwestern Ontario (see discussion of material culture), while all other available samples may be subject to bias owing to intra-site variation and/or other considerations (M. Wright 1986:65). One other potential problem is that at least some aspects of material culture were evidently changing very rapidly during this period. This rapid rate of change, combined with the short time span of the Uren substage and the limitations of many artifact samples complicate both the task of seriation and the investigation of regional variation.

The assertion that the Uren substage represented the early expression of a broadly homogeneous Middle Iroquoian horizon (J. Wright 1966:53) has been subject to somewhat less intensive debate than Wright's conquest hypothesis. Nevertheless, subsequent researchers have tended to emphasize geographic differences in material culture as evidence of regional variation within both the Uren and Middleport substages (Kapches 1981; Pearce 1984; Sutherland 1980; Timmins 1985). Concurrently, it has been suggested that temporal differences existed in the rate of material culture change and cultural development (Pearce 1984:189-190,193; Timmins 1985:163-164). The problems noted earlier with respect to the precision of the chronology and the reliability and comparative data again argue for caution in the study of geographic and temporal variation. What can be stated is that the Uren substage is characterized by an increased level of contacts between the populations of the Pickering heartland of southcentral Ontario and the Glen Meyer heartland of southwestern Ontario. To the extent that the relative influences can be measured, those originating in the southcentral region are most pronounced. This can be seen most clearly in the advent or increased popularity of typical Pickering traits in the Uren assemblages of southwestern Ontario, notably the ribbed paddle vessel body treatment and horizontal rim motifs. The degree to which material culture traits reflect the level or even direction of influence, however, is problematic. The nature of the contacts reflected also remains to be determined, although the millennia-old trade or exchange in Onondaga chert from southwestern to southcentral Ontario certainly provided one potential mechanism for the spread of ideas.

Shifts in settlement patterns at the end of the thirteenth century have been used to infer population increase and changes in economic and socio-political organization. As a preface to this discussion it should be noted that the data available are limited and therefore interpretations are tentative.

Early Iroquoian villages are characterized by a high frequency of houses overlapping houses, houses overlapping palisades and even villages overlapping villages, as in the case of the Glen Meyer Elliot village (Fox 1986b). Early Iroquoian subsistence was based on a "mixed economy" in which corn cultivation was one aspect of a seasonal round which included hunting, fishing and gathering (Pearce 1984:285- 286; Williamson 1985:342). Extensive village rebuilding is thought to reflect this pattern, as villages were abandoned and reoccupied over an extended period of time (Dodd 1986).

The degree of rebuilding noted in Early Iroquoian villages is not evident on the few excavated Uren villages. Rather, the increase in house feature and post mould densities at this time would suggest that villages were more intensively occupied, but over a shorter period. These more permanent villages are thought to be a result of increasing reliance on corn cultivation (Noble 1975a:37; Pearce 1984:288).

Increasing dependence on corn cultivation has been cited also as the reason for an apparent movement off the sand plains during the Uren substage (Pearce 1984:287; Warrick 1984b:14; Williamson 1985:343). It has been suggested that sand plains were abandoned in favour of heavier loam and clay loam soils with better moisture retention capabilities more suitable for agriculture. A cooler drier climatic period ca. A.D. 1300 has been invoked as the cause for the movement which ultimately resulted in competition for limited resources leading to endemic warfare (Warrick 1984:65). However, this hypothesis is not corroborated by currently available data. As mentioned in the section dealing with settlement and subsistence, the majority (45%) of Uren villages are located in or adjacent to sand plains in areas of sandy loam soil (75%).

During the late thirteenth and early fourteenth century there is an increase in mean village size and longhouse length: villages of this period are roughly twice the size of the average Early Iroquoian village and longhouses are double the length of the average Early Iroquoian house. This increase has been attributed to natural population growth (Noble 1975c:40; Warrick 1987), and village amalgamations (Pearce 1984:377; Williamson 1985:343). The primary reason given for village coalescence is that it was a defensive response during times of warfare. However, current data, meager though they are, do not substantiate such a proposition: not all sites are palisaded and there is little evidence for cannibalism or prisoner torture at this time.

Pearce (1984:299) has speculated that the small rectangular houses common on Early Iroquoian sites are not found in Middle Iroquoian villages and suggests this is due to a "more rigid adherence to residence and descent

rules, which were most likely matrilocal and matrilineal." However, the Uren type site has two such houses which may have been used as extended family dwellings (M. Wright 1986:16). Furthermore, data presented in the settlement and subsistence section indicate that at this time there was a great deal of variation in house length. It has been suggested that this variation represents amalgamation of households under powerful military leaders in a time of increasing hostilities (Warrick 1984a:66). Alternatively, variation in longhouse length may represent differential accumulation of wealth/status, as has been hypothesized by Hayden (1976) for a later period.

The placement of dwellings in groups of closely spaced aligned longhouses during Uren has been cited as evidence for organized village planning coordinated by a chief and village council (Noble 1975a:40; Pearce 1984:303-304). It has been further asserted that this parallel alignment of longhouses reflects crystallization of the matrilineage (Noble 1969:21; Trigger 1985:92; M. Wright 1986:63). These hypotheses are based more on historic analogy than archaeological data, and although this technique is used frequently in the study of the Middle Iroquoian stage, the application of this approach to a period predating the historic period by at least 200 years should be used only with extreme reserve (P. Ramsden 1977a).

Middleport (ca. 1330-1400)

J. Wright (1966:59) characterized the Middleport substage as a period of relatively greater cultural homogeneity than Uren, and which ended ca. A.D. 1400 with the tribal differentiation culminating in the emergence of the historic Huron, Petun, Neutral and Erie. Subsequent researchers have generally questioned the degree of homogeneity during Middleport, and have tended to focus rather on geographic variation as proof of the earlier development of distinctive local or tribal entities (Kapches 1981; Sutherland 1980; Pearce 1984; Timmins 1985).

The dating of the Middleport substage is on somewhat firmer ground than Uren, if only because of a larger sample of acceptable radiocarbon dates. On the balance, the dates for sites of this general period suggest a time span of some 50-70 years, ca. A.D. 1330-1400. As implied with respect to Uren, it is possible that the Middleport substage emerged earlier and/or persisted longer in some areas, although the evidence does not appear sufficient to resolve the matter, or to warrant the suggestion that Middleport was a sloping horizon which began earlier in the west, as has been suggested (Timmins 1985:163). Nor does the evidence appear to support alternative chronologies, including the suggestion that Middleport developed by or before A.D. 1300 (Pearce 1984:145), that it comprised a limited span ca. 1290-1330 A.D. (Timmins 1985:98), or that it extended into the mid-fifteenth century (Finlayson and Byrne 1975:34; Finlayson et al. 1989:6).

A comparison of Uren and Middleport villages suggests that changes in settlement patterns during the Middleport substage do not appear to be of the same magnitude as those observed in the transition from Early Iroquoian to Uren. Middleport villages, on average, appear to be somewhat larger than Uren villages. Average Middleport house length is slightly longer than the norm for Uren dwellings. The internal arrangement of Middleport houses follows the pattern established for Uren houses, with high densities of features and interior post moulds.

Again, as observed for Uren villages, longhouses appear to be arranged in clusters of two or more similarly aligned groups that some consider are related matrilineages or clan groupings (Pearce 1984:301; Trigger 1985:92). A comparative ceramic attribute analysis of Nodwell longhouses failed to produce evidence to support such a proposition (J. Wright 1974:308).

The presence of palisades, the suggested defensive placement and orientation of houses, and evidence of cannibalism (Pearce 1984:322; Warrick 1984a:63) have been cited as indications that warfare was endemic. Alternatively, the limited amount of cannibalism and prisoner torture, absence of palisades, and disregard for defensive placement of villages have been used to suggest that Middleport was, in general, a time of peace and cultural stability (Kapches 1981:308; Warrick et al.1987; J. Wright 1960:115). Perhaps the degree to which defensive measures were taken depended on the extent of hostility in any given region (Lennox et al. 1986:34). Hopefully, further excavations of Middleport villages will solve this controversy.

The conflicting concepts of regional variation and broad cultural homogeneity are potentially the most contentious issues for the Middleport substage. On the one hand, the coefficients of similarity presented by J. Wright (1966:155) in support of a broad cultural horizon during this period would appear to be too low to support that assertion. On the other hand, the sites in J. Wright's sample were in some cases hundreds of miles apart, so that significant differences would be inevitable, and all researchers would grant that broad similarities do exist between different Middleport assemblages. In effect, it is only recently, with the growth of attribute analyses, the study of local sequences, and a vastly increased sample of sites and artifacts that it is becoming possible to recognize the range of variation within the norm. Unfortunately, much of this data is not yet formally published. Hopefully it will be in the near future.

The most detailed study of this nature to date has been by Kapches (1981:302), who identified ten geographic clusters or regional foci of Middleport. Certain aspects of Kapches' study are not germane to this discussion owing to differences in the definition of Middleport. In short, she adopted a broad definition which included Uren substage sites as well as a number of sites considered here to pertain to the immediate post-Middleport period (Pound, Slack-Caswell, Milton, Retreat, Moyer and Perry I). The deletion of these site removes two of her ten foci (Aylmer and Waterloo), and little can be said with respect to several of the other foci which only comprise one or a few sites. Of the remainder, only two definite Middleport foci have substantial numbers of sites, Markham and Simcoe, and sites of the latter suffer from small artifact samples, with rim sherd samples ranging from only nine to 84 (averaging 28). In short, a range of sites with adequate samples for comparative purposes continues to be a problem for regional studies of the Middleport substage.

As a footnote to the above discussion, it should be reiterated that a reliable chronology is a fundamental prerequisite to the study of these matters at any but a very generalized level. At present, we would be hard pressed to prove the contemporaneity of any two Middleport sites in Ontario on the basis of absolute dating, and until or unless that level of confidence is attained it will not always be possible to distinguish between temporal and geographic variation, let alone to quantify the distinctive traits of any one population group. It must be admitted, however, that this rather cautious or pessimistic viewpoint has not been shared by all researchers in the field, and that studies of regional variation will undoubtedly continue. It is only to be hoped that our grasp of the chronology will improve apace.

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CHAPTER 11

THE HURONS: ARCHAEOLOGY AND CULTURE HISTORY

Peter G. Ramsden

Introduction

The Hurons were a group of Iroquoian-speaking horticulturalists that in the early 17th century inhabited a small area of south-central Ontario known historically as Huronia, between Lake Simcoe and Georgian Bay. The term Huron is derived from a French word that means roughly "like a boar" and may be a reference to the Huron custom of wearing a strip or lock of hair standing straight up. The term was, however, apparently also used to refer to what the French considered rustic or "uncultured" people in general.

Seventeenth century Huronia was apparently divided into a number of areas, each occupied by a named tribal group, referred to as "nations" by some observers. To the west of Huronia, in the area of present-day Collingwood, was a group of closely related people referred to as the Petun, after their practice of growing large amounts of tobacco. The Petun seem in general to have been similar to the Hurons, and the two groups may have formed a single cultural tradition prior to the 17th century. Readers wishing a more detailed ethnographic picture of the 17th century Hurons should consult Heidenreich (1971, this volume), Trigger (1969, 1976) or Tooker (1964). Information on the Petun can be found in Garrad (1965, 1969, 1978a, 1978b) and Garrad and Heidenreich (1978).

Archaeologists use the term Huron to designate not only historic and late prehistoric archaeological sites in Huronia itself, but also to a large number of prehistoric and protohistoric sites widely distributed throughout south-central Ontario, between the Trent River, the Niagara Escarpment and Lake Ontario, dating roughly between A.D. 1400 and A.D. 1600. The material culture and other archaeological patterns on these sites are so similar to those of the historic Huron that there is no doubt that they represent the cultural antecedents of those people.

It should be pointed out by way of a caveat that the following discussion of Huron archaeology, being abbreviated, suffers predictably from omissions and over-simplifications. It also reflects the bias of being oriented towards aspects of Huron archaeology and prehistory with which the writer is most familiar, through fieldwork or other research. Readers are urged to consult the references cited in the text for additional information and alternative interpretations.

History of Research

Archaeological interest in the Hurons is probably as old as the European settlement of southern Ontario. Systematic study of Huron archaeological sites dates to the late 19th century, when early researchers such as David Boyle, Andrew F. Hunter and George E. Laidlaw began recording the locations of Huron sites and made comments on site size, middens, ossuaries and the general nature of the assemblages. One of the concerns of this early research in Huronia was the identification of historically documented Jesuit mission sites. In the period from 1920 to the early 1950s investigations of Huron sites were conducted by W. J. Wintemberg, Wilfrid Jury, Frank Ridley, J. N. Emerson, T. F. McIlwraith and Kenneth Kidd, among others. Their efforts resulted in the excavation, testing or examina-

tion of numerous sites in Huronia (including some French mission sites), Toronto and the Trent valley, and the formulation of some hypotheses to account for the distribution of Huron sites in time and space, and the perceived similarities and differences among them.

Perhaps the most memorable, and probably the most often cited milestone in the interpretation of Huron archaeology was the publication of MacNeish's *Iroquois Pottery Types* (MacNeish 1952a). By creating a series of rim sherd types that characterized historic period Huron sites, and tracing the frequency of these types back in time onto prehistoric sites, MacNeish created a chronological sequence of Huron sites, and based on their distribution he proposed a Huron migration northward from Toronto to Huronia. A major contribution of MacNeish's work was that in addition to supporting an *in situ* hypothesis of Iroquoian origins, it allowed researchers to place other Huron sites roughly into a chronological sequence based on the frequencies of pottery types on them. Further, his delineation of pottery types that characterized different Iroquois tribal groups allowed for the identification of "exotic" or "foreign" ceramics that might represent trade vessels or copies, suggesting contact between Iroquoian groups.

In the same year that MacNeish published *Iroquois Pottery Types*, there appeared two papers by Ridley that proposed a substantially different interpretation of Huron archaeology (Ridley 1952a, 1952b). Ridley's divergent interpretation was based on the study of a series of prehistoric sites in the area of Huronia whose ceramics and other artifacts were clearly distinct from historic Huron materials. Ridley grouped these sites into a prehistoric "Lalonde culture," which he felt was derived from a local Middleport base, and which in turn provided the ancestry for later Huron sites further south in the Toronto area, in direct contradiction of MacNeish's idea of a northward movement of Hurons from Toronto to Huronia.

In 1954, Emerson completed a comprehensive study of the archaeology of the Ontario Iroquois (Emerson 1954). In this and later works, Emerson saw sites in the Toronto area, such as Black Creek and Downsview, as being involved in a south to north movement, stemming from a proposed Middleport Focus in southwestern Ontario and ancestral, not only to Ridley's Lalonde sites in Huronia but also, by means of a later northward movement, to the Historic Huron. The notion that all Huron materials in Huronia could be explained as a result of a movement of people from the Toronto area became dubbed "the MacNeish-Emerson theory," and during the fifties and early sixties stood in opposition to Ridley's contention of a separate centre of Huron development in Huronia, in the form of the Lalonde Culture (Emerson 1959b, 1961; Emerson and Popham 1952; Ridley 1958a, 1963).

Another pivotal point in the development of the interpretation of Huron prehistory was the publication of *The Ontario Iroquois Tradition* (J. Wright 1966). In this work, J. Wright produced a synthesis of Huron archaeology, including a reconciliation of the Emerson and Ridley interpretations. He viewed Huron prehistory as comprising two major divisions, the Southern Division encompassing Emerson's early sites in the Toronto area, and the Northern Division consisting largely of Ridley's Lalonde sites in Simcoe County. The two divisions were considered to have diverged from a relatively homogeneous Middleport Horizon, and to have developed in parallel, in semi-isolation, in their respective regions. A third group of sites, also located in or near Huronia, are labelled "Fusion sites" by Wright, reflecting his view that they represent a fusion in the protohistoric or early historic period of Southern and Northern Divisions occasioned by the Emerson-MacNeish northward movement of Southern Division people into Huronia. It is from these Fusion sites that Wright felt the historic Huron and Petun were derived.

Following the publication of J. Wright's *Ontario Iroquois Tradition*, the next significant development in Huron archaeology was the intensification, if not the actual initiation, of a trend towards the concentration of research on single sites or clusters of sites within small regions, such as the work by Tyyska and others at Warminster, and the work by Tyyska and Latta in the Bear Nation area near Midland (Latta 1973, 1976; Tyyska 1969; Tyyska and Hurley 1969).

The year 1975 was in some ways another watershed or turning point in Huron archaeology. In that year, William Finlayson took on the task of totally excavating the large Draper village site near Pickering, in anticipation of its disturbance by the new Toronto Airport (Finlayson 1975, 1985a). While this was not the first extensive Huron village excavation (Emerson, and later Tyyska and others, were already involved in this type of research at Warmin-

ster), the project witnessed many significant innovations in techniques for systematically and quickly retrieving data from these kinds of sites. It is probably fair to say that the Draper excavation showed the way for many subsequent projects dealing with Huron sites, in research as well as salvage contexts, and made possible a widespread shift towards settlement pattern research in Huron archaeology.

In 1975 also, P. Ramsden completed an attribute study of Huron ceramics from a sample of 26 sites across south central Ontario (P. Ramsden 1977a), following a lead suggested earlier by J. Wright (1967a). While not presuming to present this as a watershed in Huron archaeology, it did advocate a new view of Huron prehistory and a new way of approaching Huron archaeology which subsequent research has to some degree incorporated and vindicated. In brief, the study attempted to abstract from the then broad view of Huron prehistory, evidence for small local or "tribal" site clusters by refining the analytical approach to Huron ceramics. In addition, based on ceramic analysis primarily, it suggested that much of Huron prehistory had been characterized by a pattern of village fission and fusion and long-range alliances and migrations. Subsequent village excavations have shown that, indeed, in the 16th century, there was a pattern of population movement, and coalescence of small villages into larger ones.

In conjunction with the Draper site salvage project, Finlayson and his collaborators carried out a systematic survey of the projected airport property. In the process they gathered data on a number of non-village Huron settlements, as well as villages, reinforcing the already existing concern with the total range of Huron settlement and subsistence patterns, and providing another demonstration of the value of intensive local surveys in investigating Huron prehistory.

Concern in the past 13 years in Huron archaeology has been largely with just such issues as were raised by P. Ramsden and by Finlayson in his work in the Pickering airport area: analysis of sites within a restricted local context, including an attempt to recover the total picture of settlement and subsistence (P. Ramsden 1977b; Williamson 1983a); large scale investigation of village and house patterns (Finlayson 1985a; Knight 1987; P. Ramsden 1977b); and an explication of some of the complexities of Huron social and political prehistory, including the effects of initial European contact (Finlayson 1985a; Knight 1987; Latta 1976, P. Ramsden 1988a, 1988b). However, research on more traditional concerns of Huron archaeology still continues, including the identification of Jesuit Mission sites (e.g. Latta 1985a).

Huron Site Distribution

While historic period Huron sites are restricted to the area west of Lake Simcoe, earlier sites referred to as "Huron" by archaeologists are much more widespread. Besides Huronia, prehistoric Huron villages are distributed in clusters along the north shore of Lake Ontario from just west of Toronto to Belleville and north in a triangular area bounded on the Northeast by the Trent River system, and on the west roughly by the Niagara escarpment (Figure 11.1). Within this broad area concentrations of sites occur in the areas of the Humber valley, the Rouge and Duffin Creek valleys, the lower Trent valley, Lake Scugog, the upper Trent River and Simcoe County. While the complete distribution of Huron sites is probably not known, some of these clusters, such as those in the Trent and Duffin-Rouge valleys, do appear to represent prehistoric tribal developments or territories. Each cluster probably consists of the sites left by a few communities periodically re-locating villages and out-camps over a span of two hundred years or more.

Huron Archaeological Material Culture

Huron material culture is generally similar to that of other Iroquoian traditions in the Northeast, and includes, in decreasing order of frequency: ceramics, including pottery vessels, pipes and other objects; artifacts of antler, bone and shell, such as awls, needles, beads, arrow points and decorative objects; ground or rough stone items, such as celts, adzes, pipes, beads, hammerstones, manos and metates; chipped stone artifacts including arrow and spear points, scrapers, retouched flakes and chipping debris; rare Native copper objects; and, in the later part of the sequence, items of European manufacture, such as copper and brass tubular beads, awls, arrow points and kettles, iron knives and axes and glass beads.

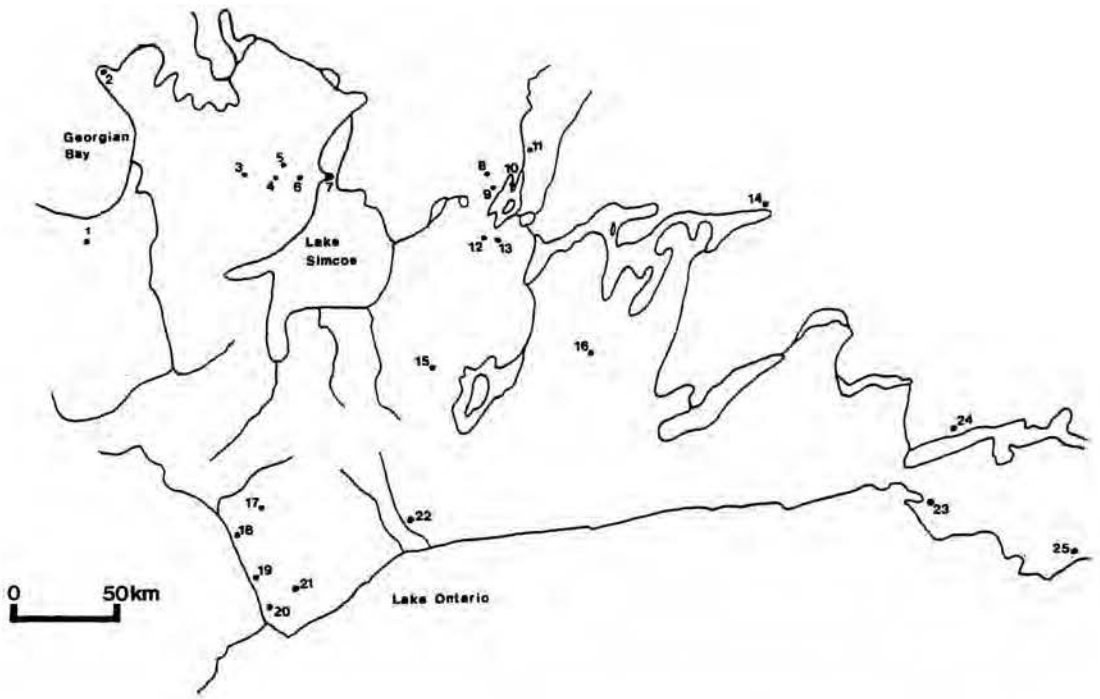

FIGURE 11.1: Huron-Petun Sites in Southcentral Ontario. 1): Sidey-Mackey and Petun Cluster (Garrad 1978a, 1978b; P. Ramsden 1977a; J. Wright 1966); 2) Penetang Cluster (Fox 1971, 1979a; W. Kenyon 1970; Latta 1973, 1976; S. Smith 1979; Tyyska 1969; 3) Auger (Latta 1985b); 4) Ball and Baumann (Knight 1978, 1987; Knight and Melbye 1983; Stopp 1985); 5) Warminster (Emerson 1962; W.R. Fitzgerald 1986; McIlwraith 1946; P. Ramsden 1977a; J. Wright 1966); 6) Sopher (Noble 1968, 1971); 7) Dougall (J. Wright 1972c); 8) Benson (Emerson 1954; P. Ramsden 1977a, 1977b, 1979, 1988a; J. Wright 1966); 9) Coulter (Damkjar 1990; P. Ramsden 1977b, 1988a); 10) Hardrock (Emerson 1954; Ramsden 1977a, 1979; J. Wright 1966); 11) Rumney Bay (Ramsden 1988c); 12) Kirche (C. Ramsden 1989; P. Ramsden 1988a); 13) Jamieson (P. Ramsden 1979, 1988b); 14) Quackenbush (P. Ramsden 1977a); 15) Thomas (Donaldson 1962a); 16) Wilson and Bark (Sutton 1989); 17) Aurora (Emerson 1954; P. Ramsden 1977a; J. Wright 1966); 18) Seed and Boyd (Donaldson 1962b; P. Ramsden 1977a); 19) Downsview (Emerson 1954; P. Ramsden 1977a; J. Wright 1966); 20) Black Creek (Emerson 1954; P. Ramsden 1977a; J. Wright 1966); 21) Parsons (P. Ramsden 1977a, 1978; J. Wright 1966); 22) Draper (Finlayson 1975, 1985a; Hayden 1978, 1979; P. Ramsden 1968, 1977a, 1978; J. Wright 1966); 23) Payne (Emerson 1966; Pendergast 1964a; P. Ramsden 1977a; J. Wright 1966); 24) Lite (Pendergast 1972a; P. Ramsden 1977a); 25) Waupoos (Pendergast 1964b; P. Ramsden 1977a).

Ceramics

Pottery Vessels

Among the historic Huron, pottery vessels were used for cooking and food storage. One brief reference suggests that pots were customarily made by women (Sagard 1865). Much of the following discussion of Huron ceramics is abstracted from Emerson (1955a, 1956a, 1968), P. Ramsden (1977a) and other sources.

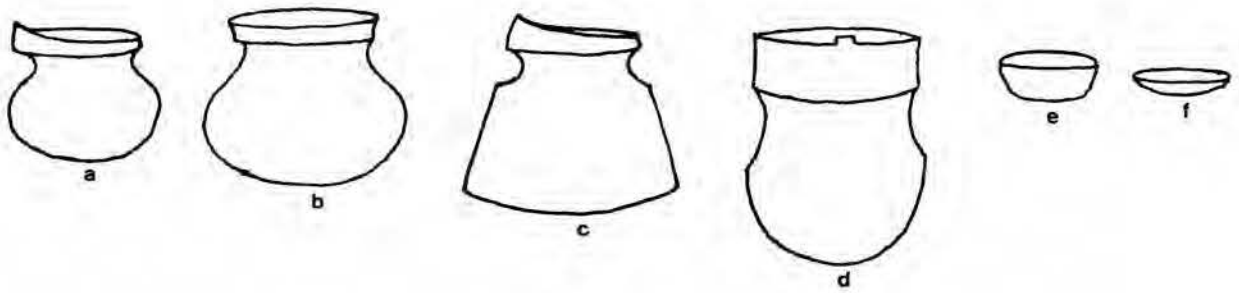

FIGURE 11.2: Some Typical Huron Vessel Forms.

Huron ceramic vessels are predominantly of typical Iroquoian form, with rounded globular bodies, slightly constricted necks and slightly flaring collared rims (Figure 11.2). Most Huron vessels appear to be molded by the "paddle-and-anvil" method (MacNeish 1952a), although a few instances of coil breaks exist. The pattern of breakage of vessels suggests that in many cases the body and neck were molded in one piece, and the flaring rim was fashioned separately and smoothed into the neck. The exterior of the vessel is almost always well smoothed, although the body may display ribbed paddle impressions or cord roughening.

Collars on most Huron vessels are short (10-30 mm), although higher collars frequently occur, and are sharply demarcated from the neck. The most common collar profile for a Huron pot has a concave or straight exterior, and a convex interior, although other profiles are quite common, and interior profile appears to vary markedly through time and space.

In addition to the typical collared pots there are other forms of ceramic vessels that occur in small numbers on Huron sites. Accounting for 2 or 3 percent of the vessels on many sites are collarless versions of the usual round-bottomed vessel. These have an outflaring rim with a flat lip, and often lack any decoration. It is possible that some or all of these may be traded or copied from the St. Lawrence Iroquoian, Seneca, or other Iroquois groups in which collarless vessels are more common, or alternatively, they may be the products of female war captives from these groups. Also occurring in small numbers are small bowls and cups (Figure 11.2e, f), usually undecorated. Some, but certainly not all, may represent juvenile ceramic experiments. Small pots that are clearly the result of juvenile or unskilled potters occur in varying frequencies on Huron sites, and are usually easily identified by the crudity of paste and manufacture, and the unconventional decorative motifs (Pearce 1978b).

Ceramic Decoration

Decoration is applied to Huron vessels in several discrete zones, any of which may or may not be decorated on any given pot. These zones are: the vessel interior immediately below the lip, the surface of the lip, the collar or exterior surface below the lip, the neck, the shoulder and the body (Figure 11.3). Decoration is usually applied by dragging a narrow pointed object through the wet clay (incising or trailing), by pressing a short linear object into the clay (stamping), or by pushing the end of a pointed object into the clay (punctation). Far less common techniques, some of which may represent imported vessels, include cord-wrapped stick impression, dentate stamping, push-pull, modelling or applique, and painting.

The most frequently decorated zones are the collar, neck and shoulder. Collar decorations (Figures 11.4, 11.5) usually take the form of relatively simple straight line motifs consisting of various combinations of vertical, oblique or, less commonly, horizontal lines. These motifs may be accompanied by secondary decoration consisting of short gashes or punctates, at the top or bottom of the collar or between decorative panels.

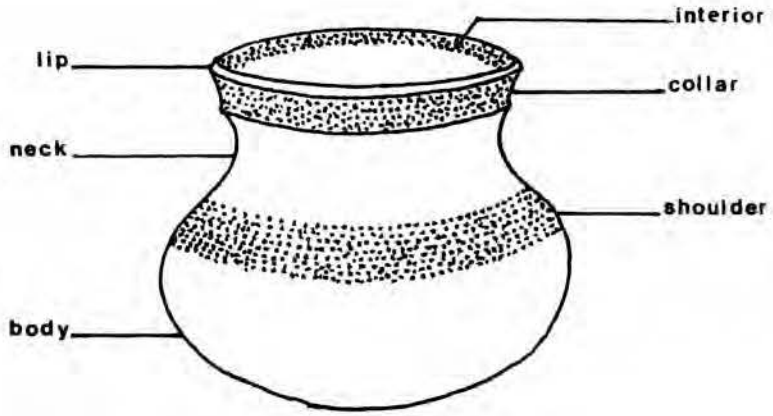

FIGURE 11.3: Huron Vessel Decorative Zones.

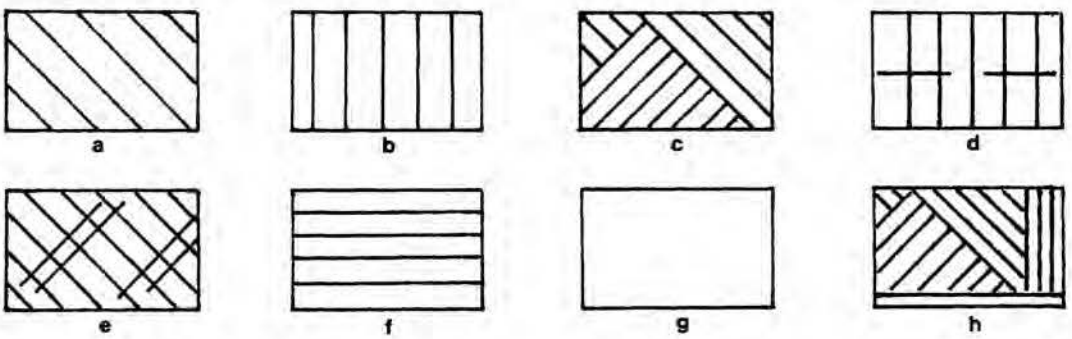

FIGURE 11.4: Some Common Huron Collar Motifs.

The popularity of some collar motifs varies chronologically and spatially. The Simple motif (vertical or oblique lines; Figure 11.4a,b) increases in popularity through time in most areas, and reaches a frequency of 80 percent or more on some historic period sites. The Opposed (Figure 11.4c) and Horizontal (Figure 11.4f) motifs appear to be more popular in the early part of most Huron sequences, and decrease in popularity through time in most areas. Some collar motifs may be particularly characteristic of regional or tribal groupings.

Neck decoration also varies through time and space. In general, decorated necks are popular in the early part of the sequence and decrease in frequency through time. The frequency of particular neck motifs varies from region to region, but the most common ones everywhere are: opposed oblique lines, horizontal lines, and horizontal lines above oblique lines (Figure 11.6).

Decoration is frequently applied in a horizontal band around the shoulder of Huron vessels, most commonly as a single row of punctates (Figures 11.5; 11.7a), which may occur in conjunction with either plain or decorated necks, and either plain or decorated bodies. Other common shoulder motifs (Figure 11.7b-e) are more likely to occur alongside undecorated necks or bodies.

Decoration on the interior of the rim usually consists of a row of punctates or short gashes. This decoration is more common in the early part of the sequence, and also varies in frequency from one region to another.

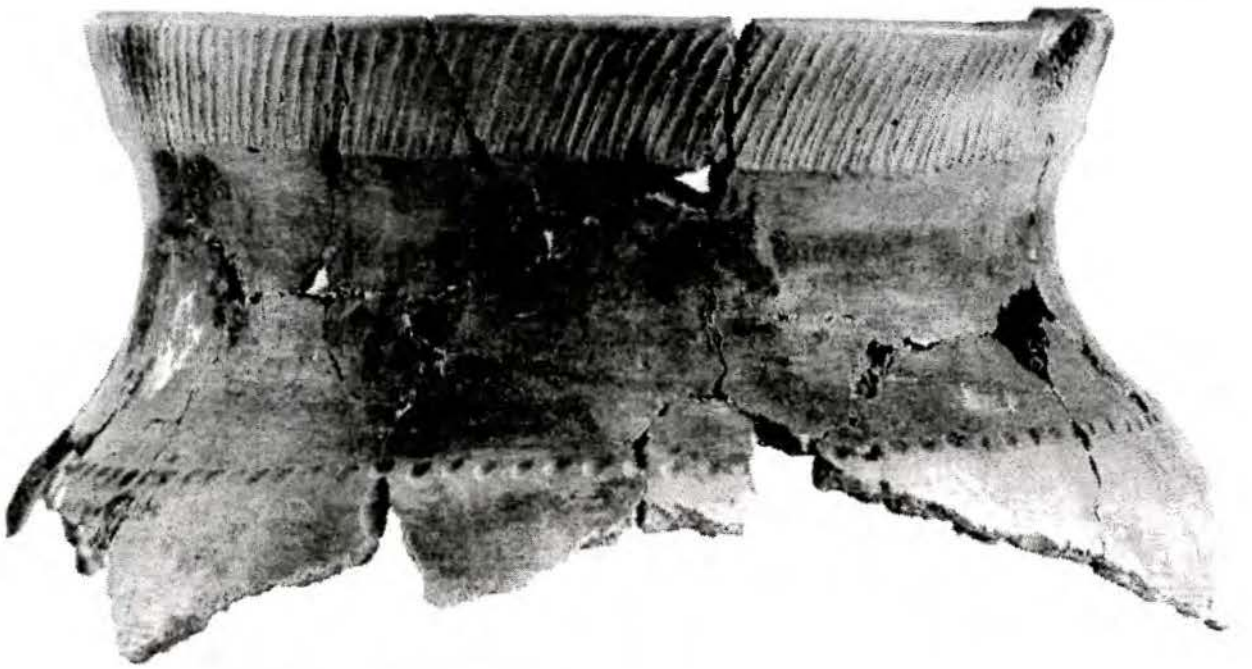

FIGURE 11.5: Reconstruction of Huron Ceramic Vessel.

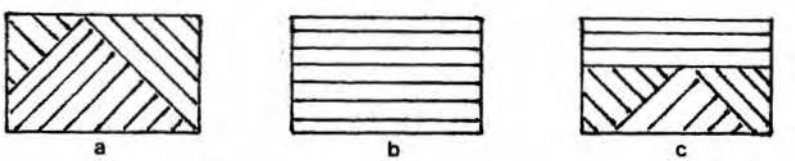

FIGURE 11.6: Some Common Neck Motifs.

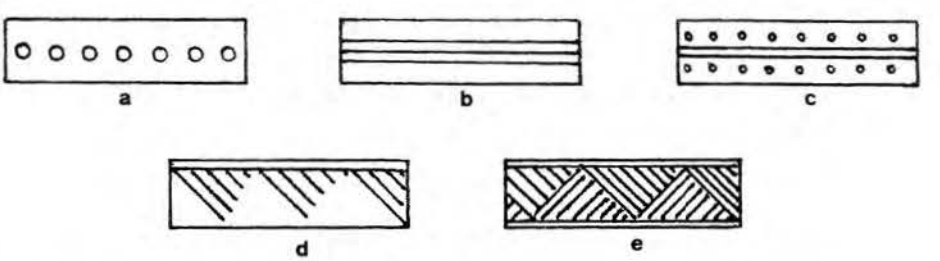

FIGURE 11.7: Some Shoulder Motifs.

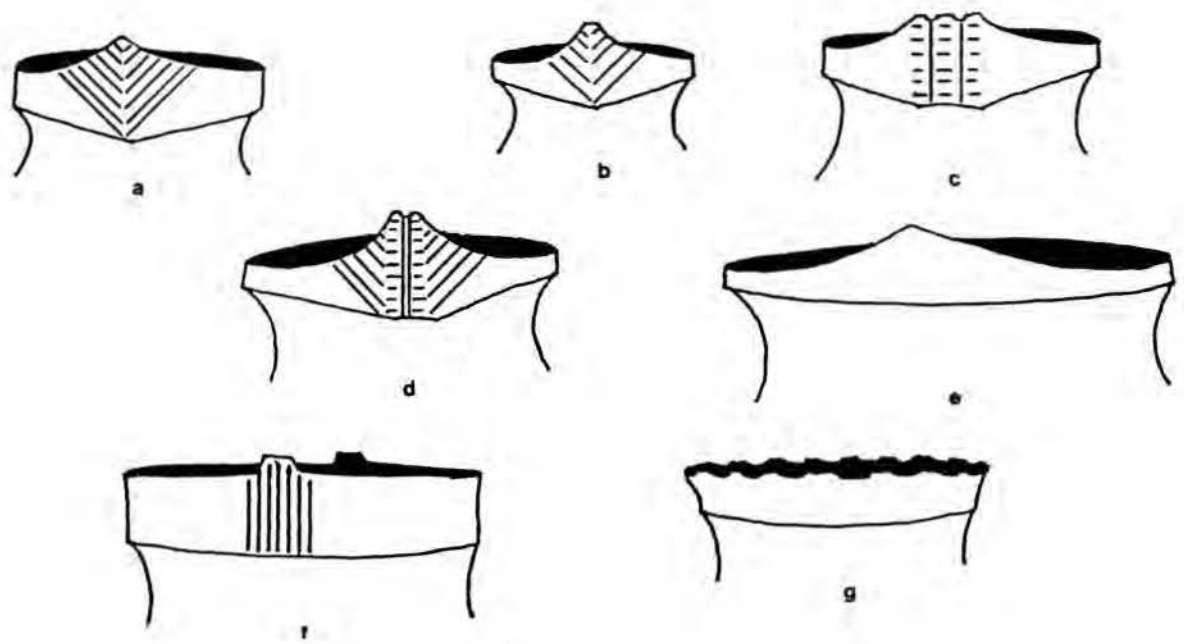

FIGURE 11.8: Some Typical Castellations and Associated Motifs.

Lip decoration is usually transverse or oblique incised lines, although longitudinal lines and punctates also occur. Decoration on the lip tends to increase in frequency through time and may also have some spatial significance.

Castellations

On many Huron vessels, as on the vessels of other Iroquoian groups, are castellations: raised projections of the rim that modify the shape of the collar and of the pot mouth, and are often accompanied by distinctive decorative motifs (Figure 11.8). Emerson (1955a, 1968) has discussed the temporal and spatial variation of several Huron castellation types. In general, early Huron castellations tend to be simple pointed or rounded forms, that are simply peaks on the top of the collar (Figure 11.8e). In contrast, later forms are often more elaborate, and tend to project outwards, overhanging the neck and giving the mouth of the vessel an ovate shape (Figure 11.8a-d). Huron vessels may have only one castellation, although vessels with two or more frequently occur (Figure 11.8f). Some vessels display what Emerson refers to as "multiple" types, in which the lip has a scalloped effect (Figure 11.8g).

Simple castellations may have no specifically associated decoration, the collar motif continuing uninterrupted beneath (Figure 11.8e, g). Usually, however, there is a panel of decoration that interrupts the collar motif below the castellation, varying from a band of vertical lines (Figure 11.8f), to the very common chevron or inverted chevron motif (Figure 11.8a, b), to more elaborate motifs combining vertical lines or grooves, lip notching, horizontal lines and occasionally other elements (Figure 11.8c, d).

While some researchers have speculated on the possible functional significance of castellations, suggesting that they were spouts or appendages for securing suspension cords, they are most plausibly explained as purely decorative elements.

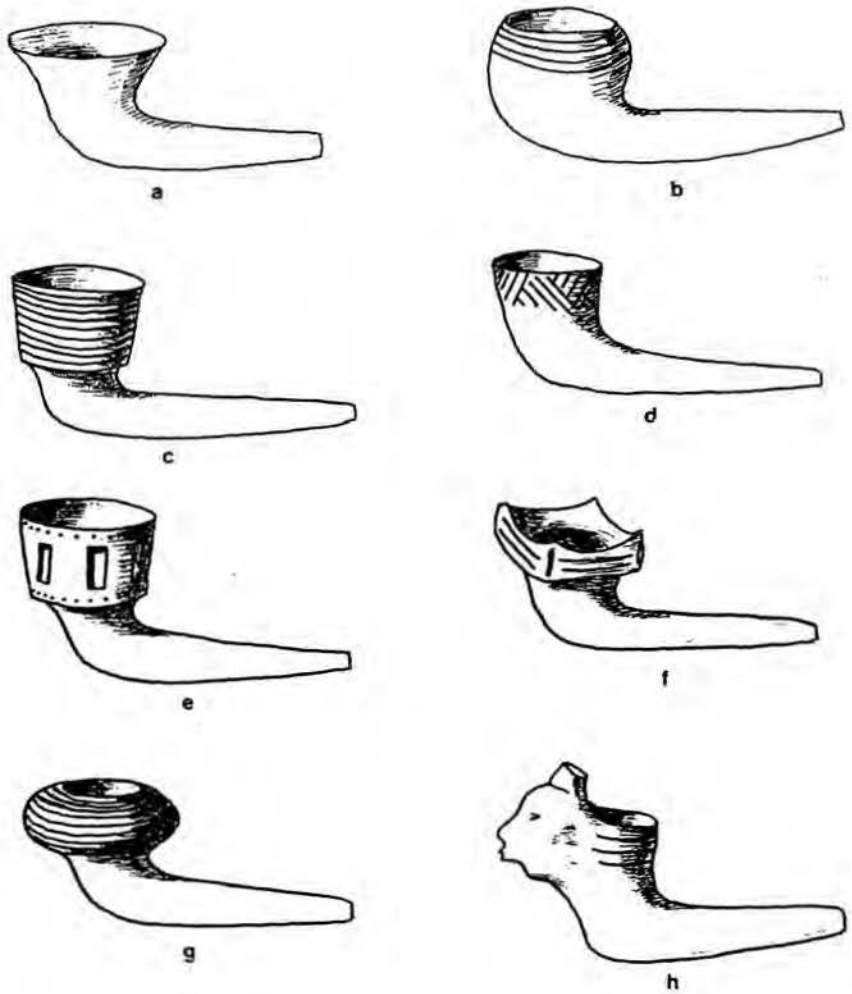

FIGURE 11.9: Some Common Huron Pipe Styles.

Ceramic Pipes

Fragments of ceramic smoking pipes are common items on most Huron sites, and occur in a variety of styles, some of which are illustrated in Figures 11.9 and 11.10. There are obvious chronological trends in the frequency of pipe styles: the trumpet (Figure 11.9a), ring bowl (Figure 11.9b), and conical (Figure 11.9d) are characteristic of earlier sites, while the mortice (Figure 11.9e), coronet (Figure 11.9f), bulbous ring (Figure 11.9g) and effigy (Figure 11.9h) types tend to predominate on sites of the protohistoric and historic eras.

Many different interpetations have been suggested for the decorative styles of pipes, particularly the effigy varieties, including totemic symbols, portraiture, shamanistic paraphernalia, spirit representations and symbolic representations of Huron celebrities of one type or another (Matthews 1981a; Noble 1979; Pearlstone 1976). In contrast to pottery vessels, pipes are thought to have been made and used primarily by men (Woolfrey et al. 1976).

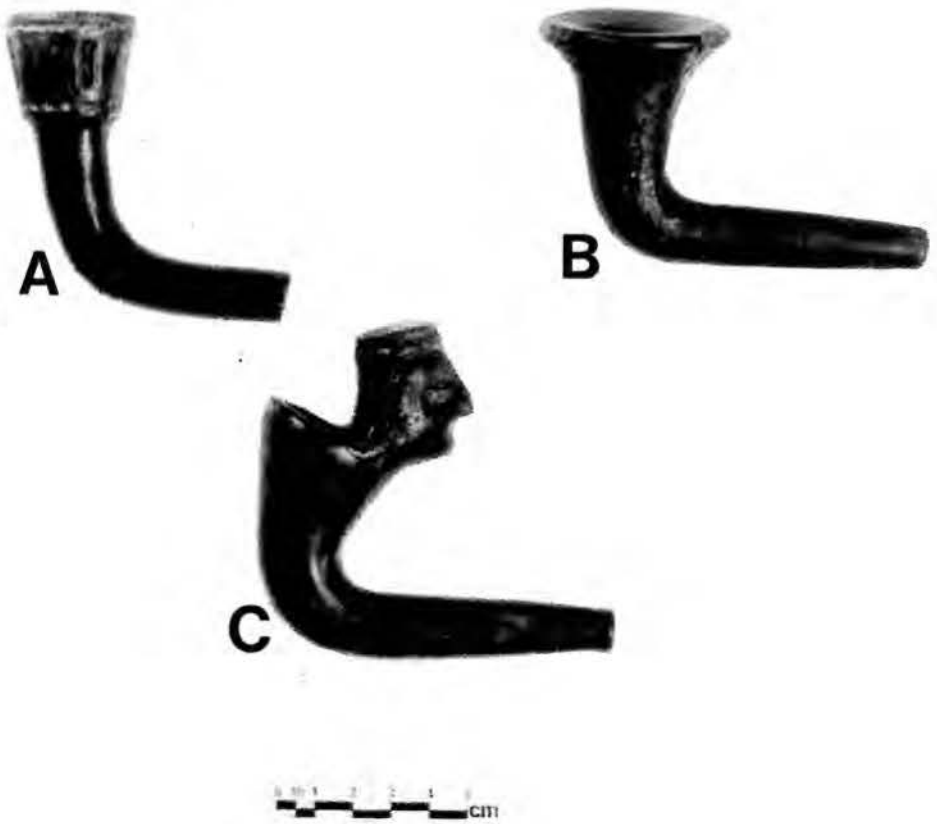

FIGURE 11.10: Huron Clay Pipes. a) Mortice pipe; b) Trumpet pipe; c) Human effigy pipe. Reproduced courtesy of Royal Ontario Museum, Toronto.

Other Ceramic Artifacts

Gaming Discs

Gaming discs are small (usually about 2 cm in diameter) ceramic discs, often made by grinding the edges of a sherd from the body of a broken pot. The name is a reflection of the supposition that they were used as pieces or tokens in some form of game. They are common on St. Lawrence Iroquoian sites, and become numerous on Huron sites in the later 16th century.

Ceramic Beads

Clay beads are small cylindrical objects, and are often made by grinding smooth the ends of fragments of broken pipe stems, while others are made from scratch.

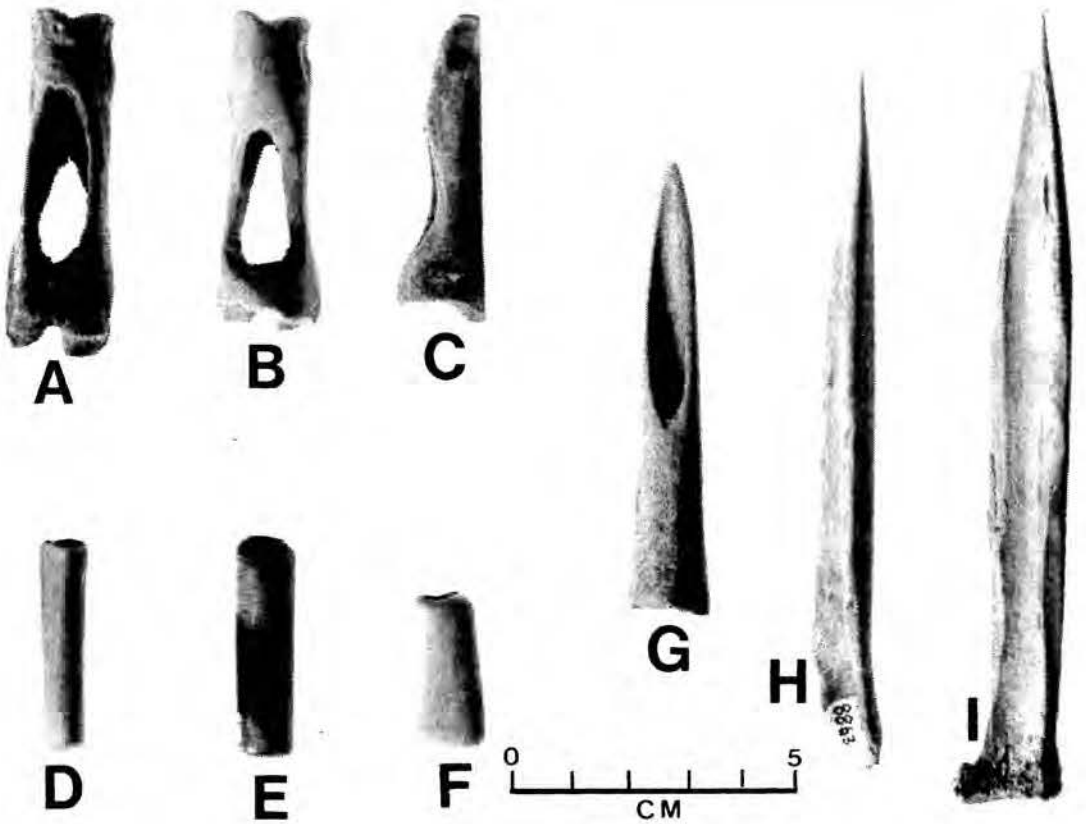

FIGURE 11.11: Huron Bone Artifacts. A-C: Deer phalanx toggles; D-F:Beads; G: Projectile point; H-I: Awls.

Ceramic Waste

Most Huron sites produce amorphous lumps of fired clay that are probably either discarded by-products of ceramic pot manufacture, or are the products of children.

Organic Artifacts (Figure 11.11)

Bone and Antler

Huron sites produce a rich variety of bone and antler artifacts. Most common among these are bone awls and needles and tubular bone beads. Another common and distinctively Huron bone artifact is the deer toe "toggle." These are made by grinding and polishing the phalanges of deer to a flat or triangular shape. Among some of the suggested interpretations of these artifacts are toggles for fastening to the end of a line, and dice or gaming pieces (McCullough 1978). Other bone artifacts include flat and conical projectile points, arm bands, flint flakers, pendants, bone tubes, and daggers.

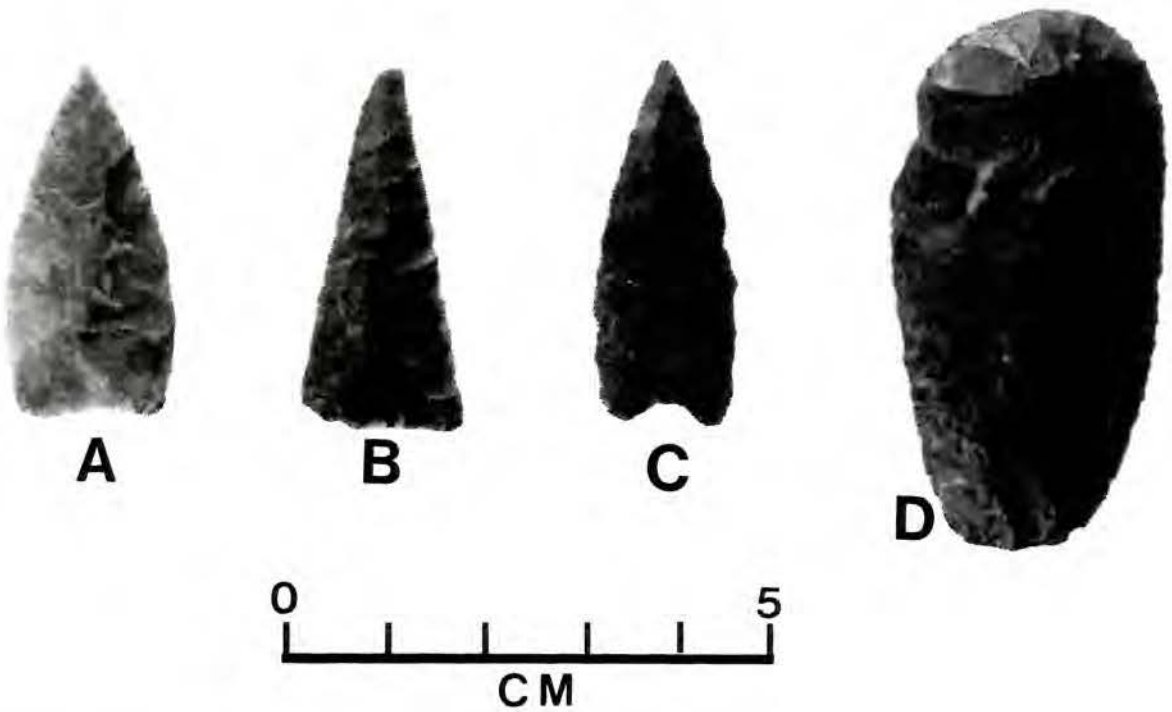

FIGURE 11.12: Huron Chipped Stone Artifacts. A-C: Arrow Points; D: Scraper.

Shell

Huron shell artifacts are usually restricted to a few ornamental categories, such as discoidal beads and pendants. In the protohistoric and historic periods, tubular beads made from marine shells occur, and reflect the more extensive trade networks of the post-contact periods.

Lithics (Figure 11.12)

Chipped Stone

It is characteristic of Huron sites in general that the chipped stone assemblage is very limited in contrast to some other Iroquoian groups such as the Neutral. Finished artifacts are usually restricted to a few small triangular projectile points, end scrapers and retouched flakes (Fox 1971, 1979a, 1979b). Arrow point styles change from predominantly side-notched in the earlier sites to unnotched triangular varieties in the later ones.

Ground and Rough Stone

Ground stone artifacts common on Huron sites include celts (ungrooved axes), adzes, and small chisels. Less common are polished stone pipes, ranging from simple undecorated conical types to more elaborate effigy forms. Rough stone artifacts include hammerstones, anvil stones, manos and metates.

Metal and European Items

Metal Artifacts

Items of Native copper, most often rolled tubular beads, occur in small numbers from the very beginning of the Huron sequence, and probably reflect the existence of at least indirect trade contacts with the copper-rich areas of northern Ontario or northern Michigan.

European Items

European items were introduced into Huron communities in the early or mid-sixteenth century through a Native trade network extending to the east coast, perhaps via the St. Lawrence River. The first European items to appear are small pieces of copper scrap cut from kettles, often rolled into tubular beads, and rare iron items such as awls or celts (W.R. Fitzgerald and Ramsden 1988; Noble 1971). Beginning in approximately 1580, the European goods became much more varied and plentiful, and included a series of items made in Europe for the fur trade such as kettles, iron axes and knives, and glass beads. It is also possible to detect a deterioration in the quality of the metal goods being traded at this time, presumably as a cost-cutting measure on the part of the French who were the main suppliers of European goods to the Hurons (W.R. Fitzgerald and Ramsden 1988). The introduction of glass beads is a particularly significant event, since they were made in a variety of distinctive styles which varied from one manufacturing centre to another, and changed every few years. The assemblage of glass beads on Huron sites, then, gives a quite accurate estimate of their age, and also provides clues to changing patterns of European-Native economic interaction (W.R. Fitzgerald 1982a, 1983; I. Kenyon and Kenyon 1983; Kidd and Kidd 1970).

Chronology

The available radiocarbon dates from Huron sites, and from sites of the preceding Middle Ontario Iroquoian period, suggest that sites with a full-blown Huron assemblage and archaeological culture may have been present in parts of southern Ontario since the late 14th century (Timmins 1985; J. Wright 1966; Dodd et al: this volume). The radiocarbon chronology of Huron sites is often at odds with that based on the seriation of ceramics or other artifacts, and in some cases contradicts the evidence of European trade goods (Timmins 1985). Part of the explanation for this may be that charcoal recovered from hearths is from the interiors of large trees, and is in fact several decades older than the occupation of the site (Timmins 1985). It is also true that different materials of the same age (bone vs. wood for example) can produce divergent dates, and this may be another source of discrepancy (J. Wright 1985).

Settlement and Subsistence

Settlement

Huron archaeology has understandably tended to concentrate on the large villages. These are readily visible when ploughed, and often contain large mounded middens (refuse heaps) when undisturbed, and they are therefore relatively easy to locate. In addition, they are prolifically productive of artifacts and other cultural refuse, and are the remains of large, socially complex communities. These facts combine to make village sites attractive to archaeologists. There is ample historic documentation, however, of the use of smaller non-village settlements by the Hurons, and increasingly, as research projects become concerned with regional analyses of settlement and subsistence, archaeologists have paid more attention to these less visible and less materially rewarding sites. Non-village settlements used by the Huron include temporary hunting and fishing camps, cabin sites associated with the tending of corn fields, and small hamlets, either temporary or long-term, that appear to be "satellites" of major villages.

Villages

Village Location

There are some traditional generalizations about Huron village location, such as a preference for sandy soil, proximity to a permanent stream, and an easily defensible location such as hilltop or high neck of land. In reality, village locations vary significantly through time and space, and there are probably as many exceptions to these generalizations as there are sites that fit them. Certainly, "typical" villages, as described above, do exist, and in some areas probably account for the majority of village sites. In some areas, however, most village sites would be regarded as quite "atypical" by these standards. In the Trent valley, for example, village sites are typically located on low sandy or gravelly knolls close to lakeshores or in the midst of large areas of cedar swamp. Far from being in "easily defensible" locations, some villages in this area are situated at the base, rather than the top, of steep slopes.

Historic sources indicate that Huron villages were moved periodically (figures ranging from 8 to 30 years) due to the depletion of soil fertility and firewood, or to political factors.

Village Plan

The pioneering work in Huron archaeology proceeded by small sampling excavations, primarily in middens, or occasionally through the excavation of isolated house structures within the village. There has been a trend over the past 15 or so years, however (anticipated by Kenyon's excavation of the Miller site in Pickering [W. Kenyon 1968] and J. Wright's excavation of the Nodwell Site near Port Elgin [J. Wright 1974]), for archaeologists to try to reconstruct the total village plan, often by means of large scale exposure of all or large portions of the site. This trend has been spurred on and encouraged by the development of large-scale site salvage techniques necessitated by urban and other industrial development, and the previously unheard-of levels of funding that have sometimes been made available in such situations. At the same time, Huron archaeology has reached a level of sophistication at which many of our research questions demand knowledge of internal village dynamics and organization.

While the development of salvage archaeology can be viewed as a mixed blessing, there is no doubt that it has provided us with a great deal of information on Huron settlement and village organization which would otherwise have been very difficult to collect. Indeed, it could be argued that it has been the enforced large-scale salvage of Huron sites that has alerted us to much of the information potential of studying total site patterns.

There now exist complete or partial village plans for several Huron sites (e.g. Finlayson 1985a; Damkjar 1990; C. Ramsden 1989; P. Ramsden 1977b, 1988a; Finlayson et al. 1987; Knight 1987). Figure 11.13 presents an almost complete plan of the Benson site, near Balsam Lake, excavated by crews from McMaster University in 1976 and 1977. Typical of all Huron villages excavated is the multiple row palisade, or defensive wall, encircling the village. Two other aspects of this plan are of note. First, at least one longhouse is outside the village, a situation repeated at many other sites. There is some evidence to suggest that such houses may have been occupied by seasonal visitors to the village from other regions, perhaps engaged in trade (P. Ramsden 1988a).

Second, the longhouses within the village appear to be arranged into two groups, one in the northwestern part and one in the southeastern part, each containing one house much longer than all the others. The houses in the two groups are oriented differently, those in the northwestern group being oriented closer to north-south than those in the southeastern group which are oriented closer to east-west. This phenomenon, too, is repeated at other sites (Warrick 1984a), and may indicate the presence within Huron villages of social/residential sub-groups, perhaps based on kinship grouping or different ethnic origin (Warrick 1984a).

Another aspect of Huron village organization that has become familiar through the excavation of whole sites is that of village expansion. The salvage excavation of the Draper Site near Pickering, begun in 1975 (Finlayson 1985a), revealed that what had previously been regarded as a 5 to 8 acre village was in fact a 12 acre, cosmopolitan town that had undergone several population expansions during its occupation. This was initially evident from the

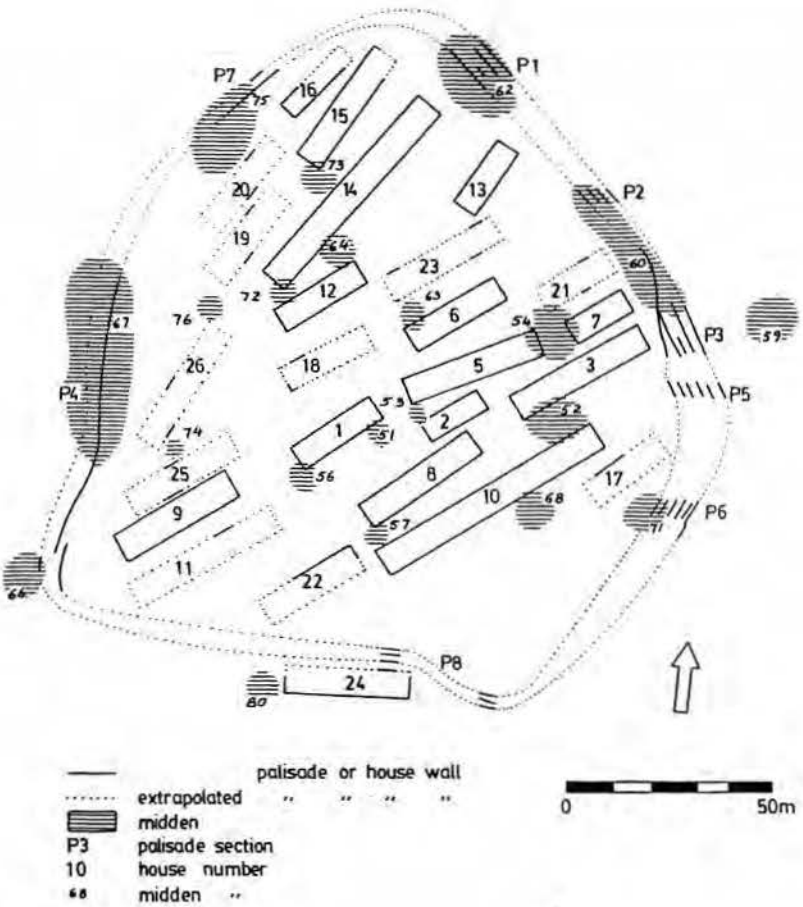

FIGURE 11.13: Map of Benson Site.

large-scale exposure of the settlement pattern at the site, which showed that the palisade encompassing the village had been expanded outwards several times to facilitate the building of a number of additional houses.

Similar patterns of periodic village expansion have subsequently been unearthed elsewhere. In the Balsam Lake area, for instance, the Coulter Site shows a pattern of palisade extension and population growth similar to that of Draper (Figure 11.14; Damkjar 1990). The Coulter site appears to have grown partly as a result of the immigration of groups of Hurons from other parts of southern Ontario, as indicated by the distribution of pottery styles within the site (Damkjar 1990). This was part of a widespread pattern of population disruption, movement and realignment during the 16th century that may have resulted from some of the effects of early European presence in the Northeast, such as trade, warfare and disease (P. Ramsden 1977a, 1978, 1988b).

Characteristic of Huron villages are large middens or refuse heaps, containing organic humus accumulations, ash lenses, large quantities of food refuse (broken bones and carbonized plant remains), and discarded artifacts. In some villages, such as those illustrated in Figures 11.13 and 11.14, middens occur throughout the village, as well as around the periphery, against the palisade. On other sites, however, middens are restricted to the perimeter of the village, and may take the form of "hillside dumps," reflecting the disposal of refuse by throwing it down the slopes around the edge of the village. While this difference may in part simply reflect the sheer size of the village, there are suggestions that patterns of refuse disposal vary through time and space.

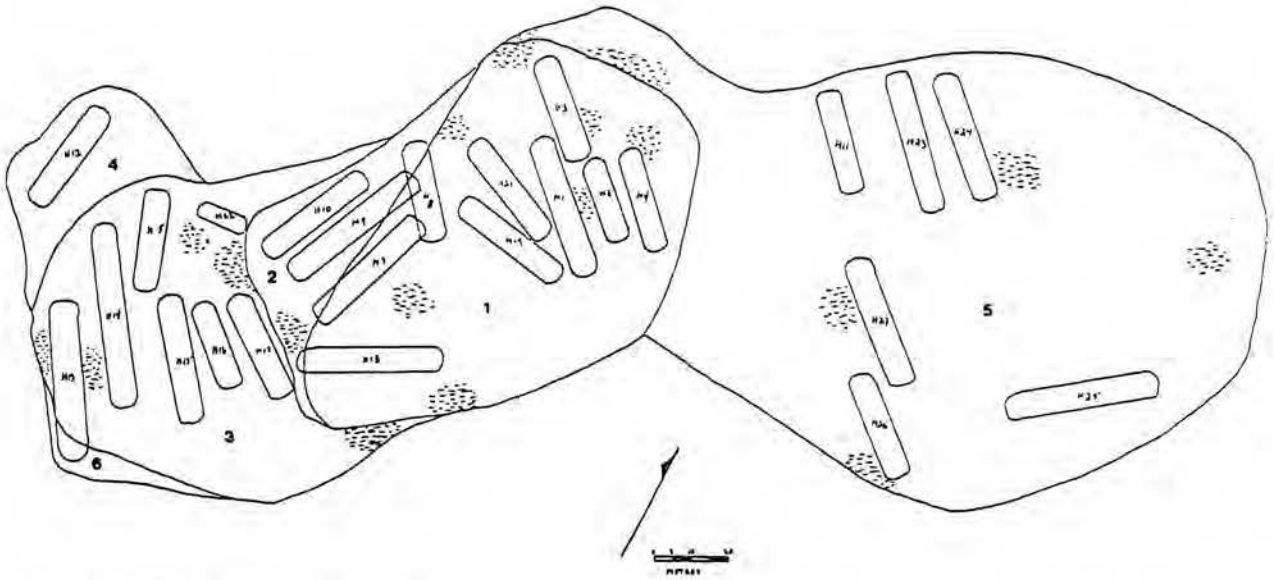

FIGURE 11.14: Map of the Coulter Site.

Non-village Settlements

In recent years, more attention has been given to the entire range of Huron settlement, including the excavation of smaller communities such as hamlets and camps (e.g. O'Brien 1976; Pendergast 1974; Williamson 1983a; J. Wright 1972c). One example is the Dougall Site, a fishing camp at the narrows between Lakes Simcoe and Couchiching (J. Wright 1972c). Of interest here is the evidence that the occupants of the camp in the Huron component were predominantly women and children, whose task it may have been to procure a spring or fall supply of fish.

Excavated in conjunction with the Pickering Airport salvage project were the Robin Hood and White Sites, two hamlets that may have housed part of the population of a nearby village (Hayden 1979; Williamson 1983a). These sites have atypical locations and settlement patterns, suggesting that they may have been used repeatedly for short periods. At the Robin Hood site, the house patterns give an indication of being incomplete or impermanent. It is suggested that such hamlets may house small population segments engaged in tending and guarding corn fields during the summer, and taking the opportunity to escape the crowds, flies and unsavory summer athmosphere of the larger village.

In the course of investigating Huron culture history in the Balsam Lake area, a number of non-village settlements were located. They include small fishing camps on the shores of Balsam Lake, hamlets consisting of two or three longhouses and one or two shallow middens, and possible cabin sites in corn fields represented by small isolated clusters of artifacts.

Figure 11.15 illustrates the distribution of three different Huron settlement types in the Balsam Lake area, indicating that of a large number of Huron archaeological sites in the area, relatively few are in fact major villages.

House Patterns

Dwelling structures on Huron sites are typically "longhouses," elongated rectangular structures designed to house several families. In historic times, families sharing a house seem to have been related through the female line of descent (a matrilineage), and this may have been true in prehistoric times as well. Some of the larger houses are

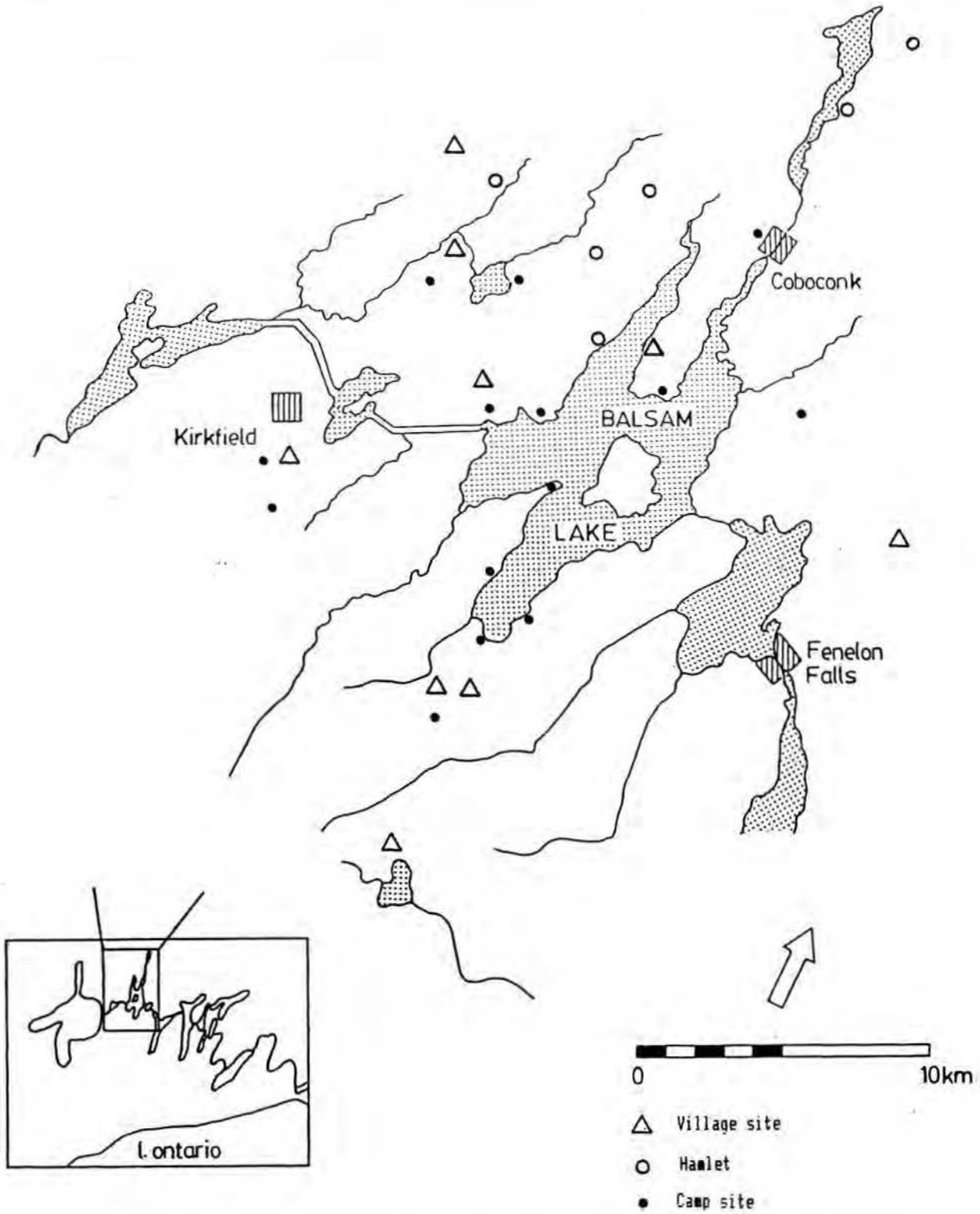

FIGURE 11.15: Some of the Huron Sites in the Balsam Lake Area.

75m long or longer; some very short houses, of about 10m in length, also occur on most Huron sites (Kapches 1984). Longhouses are consistently about 7.5m wide. House walls are usually discernable as well-defined linear arrangements of post molds, although in some cases wall trenches, dug to aid the insertion of posts in the ground, are visible (Kapches 1980a). In some cases, there is a single row of wall posts, while other houses have walls consisting of paired or staggered posts, or a poorly-patterned dense linear scatter of posts. This latter case may reflect the superimposed results of wall re-building. Some typical archaeological Huron house patterns are illustrated in Figure 11.16.

The shapes and interior features of Huron longhouses are quite varied, from region to region, from site to site, and between houses on the same site (cf. Damkjar 1990; Dodd 1984; Finlayson 1985a; Hayden 1979; Johnston and Jackson 1980; Kapches 1979; Knight 1987; Latta 1976, 1985b; C. Ramsden 1989; Noble 1968; P. Ramsden 1977b; Tyyska 1969; Williamson 1983a). From ethnohistoric evidence, we have some knowledge of how a typical Huron house of the historic period in Huronia was arranged inside (Dodd 1984). Basically, these documents describe a structure with a long mid-line corridor in which were hearths (each shared by two families), storage pits, and other features associated with daily domestic activities. Along the sides of the house were family sleeping compartments, and perhaps storage areas. At the ends of the house were communal storage areas containing casks of corn and other preserved foodstuffs.

Excavations of house interiors usually reveal the expected distribution of hearths down the centre of the house. Associated with these hearths are usually clusters of other pits and dense clusters of small posts interpreted as tripods and racks for suspension, drying and storage. In the central corridors of some houses are small circular clusters of posts that have been interpreted as sweat baths, which the Hurons are recorded to have used inside their houses. Most houses also contain large "support posts," in some cases neatly arranged in two rows flanking the central passage. The areas between the central passage and the walls may be relatively empty of pits and posts, as are the areas at the ends of the house. Clear-cut patterns of posts that might reflect the historically described interior partitions and bench supports, however, are the exception rather than the rule, and it seems clear that the internal arrangement of a longhouse was a matter for pragmatic design, probably reflecting the varying size and varying social nature of the household. It is probably also the case that internal house arrangement, as well as house construction methods, varied from one Huron group to another.

Palisades and Other Structures

The palisades that surround Huron villages typically consist of two or three rows of posts; the posts are generally about 10 to 15 cm in diameter and spaced about 20 cm apart. The rows are not always entirely discrete, and one can often observe two rows merging into one. Palisades of five or even more rows are known, but it is possible in some of these cases that some re-building of the palisade had taken place, and not all the rows of posts were contemporaneous. Defensive earthworks, known to occur among other Iroquoian groups are extremely rare on Huron sites, and in fact only one such site has been investigated (P. Ramsden 1988b, 1988c).

The area adjacent to the palisade was used for refuse disposal, as well as for other activities. In many villages, refuse dumps are located around the interior of the palisade, and often spill in between the palisade rows, or outside it. The evidence for the use of the space just inside the palisade, between the rows, and just outside the palisade for other kinds of activities takes the form of hearths, pits of undetermined function, and burials.

Some villages contain what are sometimes referred to as "internal palisades" or "snow fences." Some of these may be sections of walls intended to divide the village into segments. In other cases, the posts are very small (about 3cm) and spaced very close together, and the wall runs for only a very short distance, for example between two adjacent houses. Such structures could conceivably function as wind breaks or snow fences.

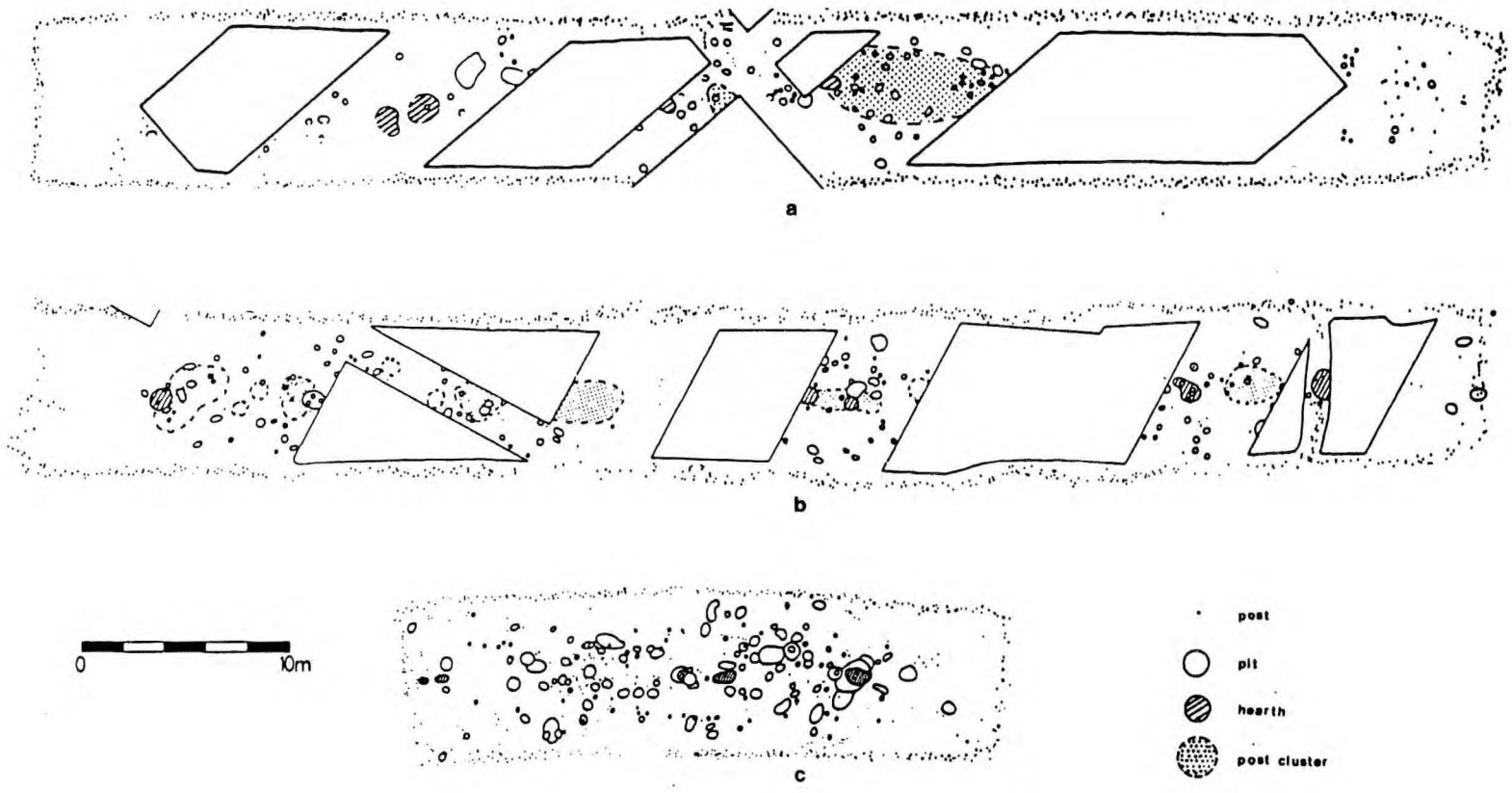

FIGURE 11.16: Benson Site Houses.

Subsistence

The Huron are well known for being agriculturalists, and middens on Huron sites almost invariably produce carbonized remains of cultigens which may include corn, beans, squash, sunflowers and tobacco (Fecteau 1985). Wild plant seeds, such as plum and raspberry, are also often recovered in carbonized form. Descriptions of historic Huron agriculture can be found in Heidenreich (1971), Tooker (1964) and Trigger (1969, 1976).

The list of animals used for food by the Hurons is extensive. Archaeological sites produce prolific quantities of bones of white tail deer, black bear, ground hog, squirrel, beaver, raccoon, muskrat, elk, dog and other mammals. Fish remains are usually plentiful as well, and include all the common species such as perch, bass, sucker and catfish. Bird bones indicate the hunting of a variety of ducks, geese, grouse and pigeons among others. Reptiles probably hunted for food include several types of turtles and frogs. Bones of other animals also frequently occur, but may represent non-food use, or perhaps accidental inclusions. Animals such as snakes and owls are as likely to be hunted for skins or feathers, respectively, as for food. The occurrence of toad and other small animal bones in middens *may* reflect subsistence practices, but may also reflect the burrowing activities of the animals themselves, or perhaps the activities of domestic dogs or predatory birds.

On sites of the proto-historic and historic periods, there is a tendency towards an increase in the frequency of domestic dog bones, and on some sites of beaver bones (Latta 1976; P. Ramsden 1977a, 1977b). Both probably reflect an increasing involvement of Huron men in the French fur trade, and a concommittent decrease in traditional hunting activities. At sites such as Benson, where bones of dog compete for pre-eminence with those of deer, it may be that dogs were being raised for food to replace traditional wild food animals which men engaged in beaver hunting no longer had the time or inclination to pursue.

Burials

A number of burial modes are recorded for the historic Huron. The mortuary system that has been taken as being "typical" is a primary placement in a grave or log crib, or on a scaffold, in a village cemetery immediately following death, and, periodically, a mass re-interment in a large common grave, or ossuary. The mass reburial took place every ten years or so at a festival known as the Feast of the Dead. Commonly, several neighbouring villages collaborated in holding the feast, each village bringing the remains of its members that had died since the last reburial to where the ossuary was to be constructed. During the reburial in the ossuary, the bones of all the deceased were intentionally mixed together (e.g. Heidenreich 1971; Tooker 1964).

Archaeologically, most attention has been paid to the large ossuaries (e.g. J. Anderson 1964; Churcher and Kenyon 1960; P. Cook 1976; Garrad 1965; Jerkic 1969; Johnston 1979; Kidd 1953; Pfeiffer 1980). These are typically circular pits, up to 10m across and 3m deep, containing the bones of up to several hundred people. Most of the bones are mixed so that individual skeletons cannot be reconstructed, but bundle burials and articulated skeletons are often included. In the prehistoric era, grave offerings are virtually absent from ossuaries, but following the introduction of European goods, grave inclusions become quite lavish (P. Ramsden 1981; cf. Kidd 1953).

In recent years, with the increasing attention to excavating village and house patterns, it has become clear that ossuary burial is by no means the only burial mode for the Huron. Infant burials within houses are common phenomena on Huron sites, and probably reflect a distinct burial mode for very young children who, in the Huron belief system, may have been inadmissable to an adult afterlife (Kapches 1976; P. Ramsden and Saunders 1987). In addition, several instances are known in which a number of individuals, of various ages and sexes, are buried within houses, or outside houses within the village, or in what might be a cemetery area outside the village (Knight and Melbye 1983; Saunders 1986; Williamson 1978). At the Draper and Ball sites (Williamson 1978; Knight and Melbye 1983) there is evidence that the individuals buried within the village may have been in some "special" category, such as war dead, or chronically ill or disabled, and may have been considered too weak to make the journey to the village of the dead. At the Mackenzie site, however (Saunders 1986a), there is no such indication, and it appears as

though cemetery interment may have been an alternative to ossuary re-burial. Given the usual strategies of Huron archaeology, the presence of small cemeteries just outside the village might be difficult to detect (Warrick and Christie 1986). By contrast, the dense mass of bones in an ossuary is readily observable when disturbed by ploughing or other activities, perhaps leading to an over-emphasis on this burial mode in the archaeological literature.

Huron Culture History

Although the periodization of Ontario Iroquoian prehistory has to a large extent gone out of fashion, we can divide Huron culture history into a few major periods, based on a combination of changes in artifact styles or other archaeological features, and the occurrence of some historical developments with widespread ramifications.

Black Creek-Lalonde Period (circa 1400-1500)

An early stage in Huron development named the Black Creek- Lalonde stage was proposed long ago by Donaldson (1958), to recognise the widespread occurrence in the period approximately A.D. 1400 to 1500 of sites possessing certain distinctive ceramic styles. These styles included a high frequency of complex neck decoration, and the occurrence of high collared, particularly Ridley's Lalonde High Collar, pottery types. Several other archaeological features could be shown to co-occur with these ceramics, including styles of pipes, arrow points, bone artifacts and castellations; and site size, location and layout.

Reported sites from this period include the Doncaster, Jackes and Black Creek sites in Toronto (Emerson 1954; Noble 1974; J. Wright 1966); the Payne and Lite sites near the east end of Lake Ontario (Emerson 1966; Pendergast 1964a, 1972a); the Fallis, Lalonde, Copeland and Baumann sites in Huronia (Channen and Clark 1965; Ridley 1952a, 1952b; Stopp 1985); and the Hardrock, Jamieson and Rumney Bay sites in the Kawartha Lakes (Emerson 1954; P. Ramsden 1977a, 1988b, 1988c). It seems likely, too, that the earliest part of the Draper site occupation can be assigned to this period (cf. Pearce 1978a; P. Ramsden 1968, 1977a; J. Wright 1966).

Distinctive ceramic elements in the Black Creek-Lalonde period include: Lalonde High Collar pottery, complex neck decoration, punctates beneath the collar, interior decoration, and simple or overhanging pointed castellations. While these traits characterize the period as a whole, there are obvious regional differences in their frequencies, to the point where quite obvious and distinct local or "tribal" groups can be discerned. Neck decoration ranges in frequency from a low of about 30% to a high of about 80%, being most frequent in the Kawartha Lakes sites (60-80%), less frequent in Toronto (33-67%), Huronia (30-50%) and Eastern Ontario (33%). The frequency of Lalonde High Collar pottery is highest on the "Lalonde" sites in Simcoe County, and can be considered the major hallmark of this local or tribal cluster of sites (J. Wright 1966), where it constitutes 20 to 40% of the pottery. On sites in other areas it is less frequent, but high collared vessels, often with complex collar decoration, that may or may not be classifiable as Lalonde High Collar, range in frequency in these areas from 5 to 20%. Thus, a high-collared style of pot, of which Lalonde High Collar is an example, is a widespread feature of this period.

Another common ceramic feature in this period is the addition of punctates on the neck immediately beneath the collar, or on the interior of the rim. Again, while these traits are generally more common in this period than later in all areas, there are large regional variations in frequency. Interior decoration tends to be primarily a Kawartha Lakes obsession, occurring on 60 to 80% of ceramics on sites of this period in that area. In eastern Ontario, the frequency drops to about 30 to 40%; the Toronto area and Huronia sites have even less: about 10%. Sub- collar punctates are quite common in both the Kawartha Lakes and Huronia, occurring on anywhere from 25% to 40% of vessels, but far less common in Toronto and eastern Ontario (about 5 to 20%).

Thus, it is possible to isolate a few ceramic attributes and pottery types that are characteristic of the period as a whole, and distinguish it from earlier and later ones. It is also possible, however, to point to marked regional differences in emphasis on these various ceramic traits, which almost certainly reflect local, tribal ceramic traditions. Indeed, the very existence of these strong regional differences may be mentioned as a further characteristic of the

period. Frank Ridley (1952a, 1952b) astutely identified the regional nature of the Lalonde cluster, but it was unfortunate that he and his contemporaries had only a unilineal evolutionary model of Huron prehistory to try to fit it into, and did not seize the opportunity to replace that model with a more realistic one.

Realignment Period (circa 1500-1600)

What has been variously termed the Late Prehistoric or Protohistoric period is here referred to as the Realignment period because of its major characteristic: the re-structuring of traditional tribal groupings, population migrations, and the coalescence of small villages into large, cosmopolitan ones. While the events of this period have been attributed to the effects of indirect European contact and the resultant competition for trade contacts (P. Ramsden 1977a, 1978, 1988b), this interpretation has been questioned, and alternative explanations based on the internal dynamics of Huron society may be preferable in some instances (Hayden 1978; Trigger 1979, 1985:106; Warrick 1984a:76). It should be pointed out, however, that the rejection of the European contact hypothesis by some authors is in large part based on diverging opinions regarding the European origins of some metal artifacts. Recent analyses suggest that at least some European metal goods were present in southern Ontario as early as the mid-16th century (W.R. Fitzgerald and Ramsden 1988) or earlier (Noble 1971; Timmins 1985).

Some of the sites that reflect the realignment of traditional social and political patterns in this period are the Draper site in Pickering in its later phases (Finlayson 1985a); the Parsons Site in Toronto (P. Ramsden 1977a, 1978); the Coulter site on Balsam Lake (Damkjar 1990); the Mackenzie, Boyd and Seed sites north of Toronto (Donaldson 1962b; Emerson 1954; P. Ramsden 1977a); the Cobourg site (P. Ramsden 1978); the Ball site in Huronia (Knight 1978, 1987); the Sidey-Mackay and McMurchy sites in the Petun territory near Collingwood (Garrad 1978a, 1978b; P. Ramsden 1977a; Wintemberg 1946); and the Keffer Site north of Toronto (Finlayson et al. 1987). These are by no means the only reported sites from this period, but are ones that demonstrate, either through settlement pattern or heterogeneous artifact styles, or both, the population movement and realignment that seems to have been a widespread phenomenon at this time.

In ceramic styles, there are some obvious widespread trends that occur, including a general decrease in neck decoration, an increase in the popularity of Simple collar motifs at the expense of most others, a decrease in interior and sub-collar punctates, an increase in lip decoration, and an elaboration of castellation styles manifested by an increase in popularity of such types as turret and grooved varieties. Also of note in this period is the appearance of "foreign" ceramics on Huron sites, most prominent among which are distinctive St. Lawrence Iroquoian types, which, along with occasional other St. Lawrence artifacts, undoubtedly reflect an intensification of trade or population exchange, through marriage, alliance or warfare, with the St. Lawrence Iroquoians (Pendergast 1985; P. Ramsden 1977a, 1978, 1988a, 1988b).

Pipe styles in this period are also more varied than previously, and include, in addition to the earlier trumpet and ring varieties, types such as the coronet, mortice, collared ring, and several styles of effigies.

Perhaps most diagnostic of the period is a change in settlement pattern. In many parts of south central Ontario there is a trend towards an increase in village size, apparently produced by the coalescence of several small villages, or segments of villages, into large cosmopolitan towns of 10 or more acres (Damkjar 1990; Finlayson 1985a; P. Ramsden 1978, 1988a, 1988b; Warrick 1984a). The artifacts on these sites show a more heterogeneous assemblage than was characteristic of earlier sites, and the communities themselves appear to have undergone periodic expansions to accommodate immigrant population segments. A concern with defense, or with community integrity, is manifest in extensive multi-row palisades and the evidence for trauma and mutilation in skeletal remains. The placement of houses in these towns indicates a degree of community planning, and probably also reflects the establishment of "ethnic" house clusters or barrios which often appear to be arranged around open areas or plazas (Finlayson 1985a; Finlayson et al. 1987; Knight 1987; Warrick 1984a). Middens are usually located throughout the site, as well as around the periphery, which may in part be a simple function of site size and the greater distance from house to village edge.

Some sites of this period have produced European artifacts, prompting their designation as protohistoric. Sites dating from the early to mid-sixteenth century may produce a few scraps of European copper or brass, sometimes re-shaped into tubular beads (W.R. Fitzgerald and Ramsden 1988), and occasionally more diagnostic iron artifacts such as awls or, in the case of the Sopher ossuary, an iron bar celt (Noble 1971). Sites dating from the later part of the period, from about 1580 onwards, may produce a more varied inventory of European goods, including iron axes and knives, copper and brass kettle fragments, and glass beads.

The latter part of this period, approaching the beginning of the 17th century, saw a general "settling down" compared to the preceding few decades, inasmuch as there appears to have been a lessening of population movement, and of village splitting and coalescence. This trend is reflected at sites such as Benson and Ball, for example, which display more internal cohesion, and show little evidence for village expansion or contraction during their occupation (Knight 1987; P. Ramsden 1988b). I interpret this as the beginning of a new consolidation of Huron socio-political groups which probably survived into the 17th century to be recorded by French observers in terms of the named nations or tribes that occupied separate territories within Huronia.

At some point during this period, the St. Lawrence Iroquoians ceased to exist as a cultural entity. The cause of their disappearance has long puzzled archaeologists and ethnohistorians alike. There is evidence from the early 16th century onwards of intensifying contact between the Hurons and the St. Lawrence Iroquoians, in the form of the occurrence of ceramics and occasionally other artifacts diagnostic of the St. Lawrence Iroquoians on Huron sites. This contact seems to reach a maximum intensity in the upper Trent Valley area in the mid 16th century, and coincides with evidence for immigration into the area, village coalescence, and an intensification of warfare. One explanation for this is that the Trent Valley Huron, perhaps among others, were engaged in hostilities with the St. Lawrence Iroquoians in the mid-16th century, and that this may ultimately have played a role in the St. Lawrence Iroquoians disappearence (Pendergast 1985). It is equally likely in my view that there was at this time a general increase in inter-tribal hostility, and that the St. Lawrence Iroquois may have been involved in conflicts in the St. Lawrence Valley, in addition to being subjected to the ravages of European diseases. The occurrence of St. Lawrence Iroquoian artifacts on Trent Valley Huron sites could also be due to the flight of St. Lawrence refugees to friendly Huron communities in the Trent Valley (Trigger 1979). The evidence from the Kirche site near Balsam Lake (C. Ramsden 1989), where most of the St. Lawrence Iroquoian material comes from a group of houses encamped just outside the village palisade, supports this supposition at least as much as one of warfare between the two groups (P. Ramsden 1988a). That some part of the St. Lawrence Iroquoians were absorbed into Trent Valley Huron communities is indicated by the occurrence there of locally made St. Lawrence style ceramics (Trigger et al. 1980:129), and ceramics combining Huron and St. Lawrence Iroquoian attributes (see also Jamieson, this volume; Heidenreich, this volume).

The French Period

Beginning in the early 17th century, and continuing until the Huron dispersal by the Five Nations Iroquois in 1649, is a period characterised by increasingly intensive contact with French explorers and missionaries, and the relocation of Huron settlement into the part of Simcoe County known historically as Huronia, and the movement of the Petun (for all intents and purposes, a group of Huron) to the area of Collingwood. Archaeological characteristics of the period include a trend towards a degree of homogenization of ceramic and pipe styles, the continued use of relatively large villages, the disappearance of evidence for large scale population movements and indications, instead, of the establishment of new, relatively stable tribal territories within Huronia, and the progressive replacement of some aspects of Native material culture by imported European items.

Reported sites from the French period include Warminster (Emerson 1962; W.R. Fitzgerald 1986; McIlwraith 1946, 1947), the Ossossane ossuary (Kidd 1953), Ste.Marie I (Jury and Jury 1965; Kidd 1941, 1949), St. Louis (Jury and Jury 1955), Orr Lake (Kidd 1950; MacNeish 1952a), Le Caron (Johnston and Jackson 1980), and Robitaille (Latta 1976).

Ceramics during this period are dominated by small, low-collared vessels with simple oblique collar decoration, turret or grooved type castellations, plain necks, a single row of punctates around the shoulders, and either plain or decorated bodies (Latta 1976). Of local or tribal significance may be the high frequency of lip decoration and undecorated collars in the Petun area, and the prominence of some collar motifs, such as the hatched motif in eastern Huronia.

Characteristic pipe styles during this period include the bulbous ring bowl, coronet, and several effigy varieties. Also characteristic of this period is the decoration of pipe stems with longitudinal rows of punctates or raised "rope-like" decorations.

One of the more significant aspects of material culture in this period is the progressive replacement of traditional Native technologies by imported European ones. This can be seen in the increasing frequency of copper and brass kettles at the expense of ceramic pots, the manufacture of projectile points from iron and brass scrap rather than chert; the use of knives of iron rather than stone; and the replacement of Native bone and stone beads with those of glass (Garrad 1969; Latta 1976).

The establishment of European communities, such as the Jesuit mission of Ste. Marie I, marks the height of French contact, and also heralds the end of the Huron cultural sequence. It was in towns to which the Jesuits gave such French names as St. Ignace, St. Louis, and Ste. Marie that the Hurons met their defeat at the hands of the Five Nations Iroquois of New York State. From the Huron point of view, this was the culmination of a period of disruption and hostilities that began a hundred or more years before. It was also the termination of a Huron cultural tradition that stretched back three hundred years, into the Middle Ontario Iroquoian period, and arguably well beyond that. The Huron people either were adopted into the Five Nations as captives, or were killed, or sought refuge among neighbouring groups, or fled with the Jesuits to Ste. Marie II on Christian Island. Historic Huronia, and prehistoric Huronia which encompassed all of south-central Ontario, sat cold and empty and windswept -- its people scattered and their homes and villages left to fall into the dirt....

Acknowledgments

I would like to acknowledge the generous support of the Social Sciences and Humanities Research Council of Canada, which funded three years of field work in the Balsam Lake area from 1976 to 1978, and the Arts Research Board of McMaster University which has funded shorter field trips to the area more recently.

This chapter is in part a product of my accumulation of knowledge and ideas on Huron prehistory over nearly three decades of study and research. The teachers and colleagues from whom I have had the opportunity to learn much of what I have put down here are legion, but among them must be mentioned Jim Anderson, Eric Damkjar, Bill Donaldson, the late Norman Emerson, Bill Finlayson, Bill Fitzgerald, Dean Knight, Scotty MacNeish, Bill Noble, Jim Pendergast, Carol P. Ramsden, Allen Tyyska and Jim Wright. I thank all of them for their conversations and stimulation. If they should note any of their own ideas that have crept in here unacknowledged, I assure them that this is due to their subtle skill in guiding my thoughts, and not to any intent to deprive them of fame, or infamy as the case may be.

CHAPTER 12

THE ARCHAEOLOGY OF THE ST. LAWRENCE IROQUOIANS

James Bruce Jamieson

Introduction

In July of A.D. 1534, the explorer Jacques Cartier encountered about 300 men, women and children in Gaspé Harbour at the tip of the Gaspé Peninsula, a group now known to have been a part of the Iroquoian-speaking peoples of the St. Lawrence River drainage. This group had travelled down the St. Lawrence River from the interior to fish and to hunt seals and porpoises in Gaspé Harbour. When they encountered the French, these Iroquoians offered various articles to the Europeans, and received some European items in return. This was the first recorded encounter between Iroquoians and Europeans.

In 1535 when Cartier travelled further up the St. Lawrence, he encountered two clusters of permanent settlements. The first consisted of several villages situated between Ile au Coudres and Portneuf, Quebec, which centered around the unpalisaded village of Stadacona at the present location of Quebec City. The Stadaconans appear to have been a semi-sedentary people, occupying locations along the St. Lawrence River which served primarily as winter residences and places to grow stands of corn. This was in contrast to the settlement patterns of the Hochelagans, another St. Lawrence Iroquoian group upriver of the Stadaconans who appeared to live in one large, triple-palisaded village, surrounded by extensive cornfields, located on the island of Montreal. The Hochelagans also utilized small fishing campsites located on the banks of streams flowing into the St. Lawrence River. Cartier records that fish, particularly eels, played an important role in the diet of both these groups (see Trigger 1972; Trigger and Pendergast 1978 for further detail).

During the winter of 1535-36, Cartier and his men stayed with the Stadaconans. Through acts of aggression motivated by ignorance and greed, culminating in the kidnapping of the Stadaconan chief, Donnacona, his two sons and others, the Europeans managed to alienate the Natives' good will. Cartier's subsequent return in 1541-42 and the attempted settlement over the winter of 1542-1543 by Jean-Francois de la Roque, Sieur de Roberval, were failures due in part to hostile relations with the St. Lawrence Iroquoians. French interest in the St. Lawrence River valley declined, and further visits to the region did not occur again until the beginning of the 17th century (see Heidenreich: this volume, for a fuller discussion of early European-Native relations).

Consequently, the accounts of Jacques Cartier are the only glimpse we have of this particular group of Iroquoian speaking people, for when Samuel de Champlain returned to the St. Lawrence in 1603 they had disappeared, their presence remaining only in the oral traditions of the remaining Native peoples in the region, their villages reportedly nothing more than grassy fields (Biggar 1922-1936[2]; Thwaites 1886-1901[9]:159). European writers over the next two centuries recorded a number of conflicting versions of the disappearance of the Stadaconans and Hochelagans. Marc Lescarbot writing in 1609 attributed their disappearance to an invasion by the Iroquois around 1600. Denis Jamet, in 1615, gave a similar account but dated the event to around Cartier's visit in the mid-1500's. Nicolas Perrot wrote that the Iroquois originally lived in the St. Lawrence Valley and were driven out by Algonquians, while Charles Aubert de la Chesnaye recorded the oral tradition of the Onontchataronon of the Lower Ottawa

Valley which stated that they had been expelled from Montreal Island by the Huron (see Trigger 1972, 1976, 1985; Trigger and Pendergast 1978).

Modern scholars have tended to attribute the disappearance of the St. Lawrence Iroquoians to two factors: the introduction of European diseases and warfare. Direct historic evidence for either hypothesis is lacking. Therefore, interpretations must rely on reasonable assumption, speculation and limited inference drawn from later events to attempt to resolve the questions concerning the St. Lawrence Iroquoian dispersal. For instance, there is no doubt that exposure to European diseases would have taken a heavy toll on Native populations, as evidenced by the disastrous epidemics recorded for the Huron and other groups in the 1600's, but while there is some evidence to suggest that Cartier and his men infected the St. Lawrence Iroquoians with a devastating disease (i.e. in the winter of 1535-36 roughly 10% of the Stadaconan population died of an epidemic), the fact that only the St. Lawrence Iroquoians disappeared from the region suggests that epidemics were not likely the sole cause for this disappearance. Unfortunately, the nature and impact of warfare is also unknown and based on inference. Most proponents of the warfare hypothesis suggest that the desire to obtain European trade goods was the motivation for aggressive behavior on the part of other Native groups against the Stadaconans and Hochelagans. Algonquians, Iroquois and Hurons are all cited as culprits, separately or as a combination (Hoffman 1961; Innis 1956; Pendergast 1985; P. Ramsden 1978; Trigger 1987; J. Wright 1972a; but see also Heidenreich: this volume). This explanation suggests that the Iroquoians of the St. Lawrence Valley were either formal middlemen in the fur trade, or simply tried to prevent unfriendly Native groups from gaining direct access to European goods. Hence, it was necessary for other groups to wage war in an effort to dislodge the Stadaconans and Hochelagans from their strategic position in the St. Lawrence Valley. As with theories pertaining to disease, there are a number of flaws in many of the warfare arguments, which may only reflect a partial answer to the question of the disappearance of the St. Lawrence Iroquoians.

Whatever the reasons for it, the disappearance of the St. Lawrence Iroquoians remains a mystery of Canadian history, one for which only the archaeological record can provide an answer. However, the available database for this Late Woodland Iroquoian group is only beginning to reach a point where such interpretations can be offered. Much disagreement still exists over not only the reasons for their disappearance, but also over basic aspects such as the age of sites, changes in artifact forms and assemblages through time, burial practices, and so on. Consequently, what is provided here is simply a review of what has been documented to date, and an attempt to identify some of the weaknesses in the database which require further investigations. Definitive answers about the St. Lawrence Iroquoian cultural history of southeastern Ontario, southern Quebec and northern New York state remain goals to be reached in the future, after much more work.

Previous Research

In 1860, workmen in the city of Montreal uncovered the remains of a Native village, located just south of McGill University. Known as the Dawson site, named after the scholar who salvaged and studied its remains -- Sir John William Dawson -- this site almost immediately was believed to be the remains of the village of Hochelaga. Indeed, work at the time concentrated on trying to match the location and description of Hochelaga, gleaned from Jacques Cartier's accounts, with those of the Dawson site. While modern scholarly opinion throws such an identification into doubt, the pioneering work of Dawson and others, like Aristide Beaugrande-Champagne, Gustave Lanctot and W.J. Lighthall, represented a first attempt to combine archaeological data with ethnohistoric accounts and attempted to shed light on the Iroquoian occupation of the St. Lawrence Valley. Not until early in the twentieth century, however, did archaeologists begin to make any real sense of the archaeological remains of these Late Woodland Iroquoian people and to show that these or closely related peoples occupied not only southern Quebec but also eastern Ontario and parts of northern New York state (Figure 12.1).

Between the years 1912 and 1915, W.J. Wintemberg carried out an archaeological survey of the eastern Ontario region, along with major excavations of the late prehistoric Roebuck site (Wintemberg 1936a). Based on the artifact assemblage, Wintemberg suggested that the inhabitants of the Roebuck site were of "Iroquoian stock" and that they were closely related to the historically known Mohawk, Oneida, and Onondaga of the Five Nations Iro-

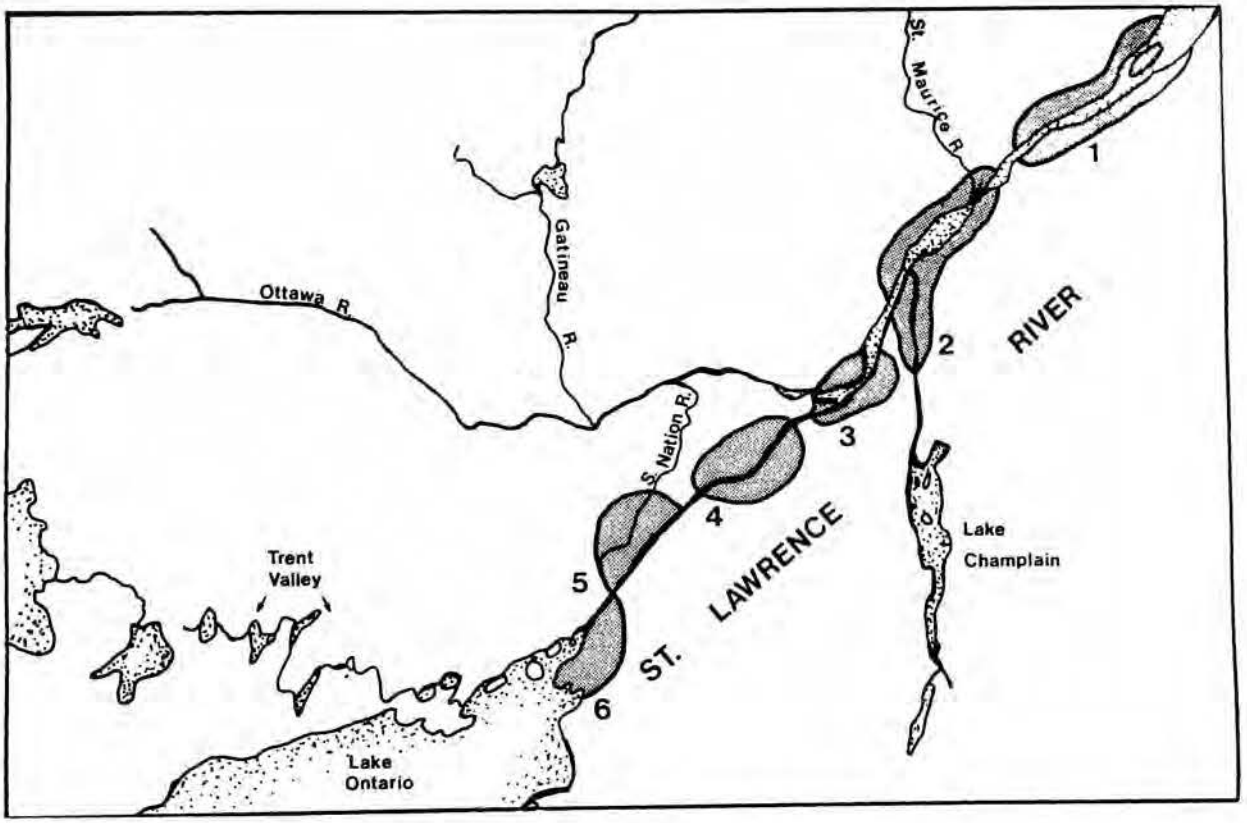

FIGURE 12.1: St. Lawrence Iroquoian Site Clusters. Sites: 1) L'Anse aux Pilotes, Baie Ste. Catherine, Beaumier, Bourassa, Cache, Cap Tourmente, Hamel, Havre de Mingan, Masson, Place Royale (Quebec); 2) Mandeville, Pte. de Gouvernment; 3) Dawson, Lanorie, Place Royale (Montreal), Pte-de-Buisson 2, Oka; 4) Aultsville, Berry, Butternut, Cameron, Casgrain Hill, Caza, East Ross, Gillies Creek, Glenbrook, Gogo, Grays Creek, Hopkins Point, MacDougald, MacFarland, Malcolm, Mice Mucking Hollow, Powerline, St. Francis, St. Regis, Salem, South Ross, Suburb, Sugarbush, Summerstown Station; 5) Beckstead, Bridge, Cardinal, Cleary, Crystal Rock, Driver, Froom, Kemptville, McIvor, Maynard-McKeown, Roebuck, Steward, 26/VI, 27/VII; 6) Caen, Chaumont, Durfee, Durham, Heath, Matheson, Morse, Mud Creek, Putnam, St. Lawrence, Saunders, Swarthout, Talcott Falls.

quois of central to western New York state (1936a:121). He based this identification on the similarities he had recognized within the Roebuck ceramic assemblage to that documented from the Dawson site, presumed to be Hochelaga, and sites in Jefferson County, New York state, presumed at the time to be Five Nations Iroquois but now classified as St. Lawrence Iroquoian.

The next attempt to examine, classify, and chronologically order St. Lawrence Iroquoian sites on the basis of pottery designs was undertaken by MacNeish (1952a). In this study MacNeish distinguished a whole series of different ceramic types which he grouped into nine general developmental traditions: Neutral-Wenro, Erie, Huron, Seneca, Cayuga, Susquehannah, Onondaga, Oneida, and Mohawk. Using the direct historic approach, MacNeish was able to seriate sites on the basis of the frequency of pottery types and to infer ethnic or spatial as well as chronologi-

cal relationships among them back into prehistoric times. Only a few St. Lawrence Iroquoian sites were included in his study, and no distinct St. Lawrence Iroquoian ethnic group was recognized at that time. On the basis of formal as well as spatial closeness, St. Lawrence Iroquoian sites were simply included in his Onondaga-Oneida sequence (MacNeish 1972). Yet, in a restatement of his earlier work, MacNeish bowed under the weight of additional evidence and agreed to a separate, *in situ* development of St. Lawrence Iroquoians (1976:95).

Since MacNeish's work, a great deal of information has been collected on the St. Lawrence Iroquoian occupations of the upper St. Lawrence in eastern Ontario, although the bulk of the data has been collected by less than a handful of researchers. J.V. Wright, P. Wright and this author have all undertaken St. Lawrence Iroquoian archaeological research. However, more than any other archaeologist currently working on the St. Lawrence Iroquoians, it has been James Pendergast who has significantly contributed to the understanding of these people. His work, which spans the last thirty years, firmly established the *in situ* development of an indigenous Native group who eventually evolved into the St. Lawrence Iroquoians briefly encountered by Cartier in the early 16th century (see Pendergast 1962, 1964c, 1966, 1967, 1973, 1975, 1981, 1983, 1984, 1985, 1988; Pendergast and Trigger 1972). Pendergast has provided a developmental sequence of the St. Lawrence Iroquoian occupation along the upper St. Lawrence River (1975), as well as a review and seriation of St. Lawrence Iroquoian ceramics still in use today (1966). As well, Pendergast has stated that the abandonment of the St. Lawrence Valley, which occurred sometime during the 62 year gap between the visits of Jacques Cartier and Samuel de Champlain (A.D. 1541 to 1603), may be explained by the increased presence of St. Lawrence Iroquoian pottery on sites in the Trent Valley within the region occupied by the late prehistoric and historic Huron (see also P. Ramsden: this volume). This may be evidence of assimilation as a result of warfare or decimating epidemics (Pendergast 1975:49).

More recently, in a study of ceramics from the St. Lawrence Iroquoian Glenbrook site, Pendergast (1981) has argued that the presence in the site's collection of Huron/Petun pipe types and ceramics suggests the presence of both male and female Huron prisoners of war who had been adopted to strengthen the depleted ranks of the Glenbrook St. Lawrence Iroquoians. Additionally, St. Lawrence Iroquoian material on protohistoric Huron sites from the Trent Valley, such as Benson, Trent, Coulter and Kirche (Damkjar 1990; C. Ramsden 1989; P. Ramsden 1990), and on historic Huron sites such as Warminster, Cedar Point and Robataille, is interpreted as the product of St. Lawrence Iroquoian prisoners and their descendants (Pendergast 1985).

Another important contributor to St. Lawrence Iroquoian research has been Bruce Trigger. He has emphasized the importance of combining ethnohistoric and archaeological research as a means to learning more about these people (e.g. Trigger 1976, 1985). As a result of his investigations into the ethnohistory of the people encountered by Cartier at Hochelaga and Stadacona, and their possible relationships with the Huron and Five Nations Iroquois, Trigger was able to lay to rest the confusing terms of "Laurentian Iroquois" and "St. Lawrence Iroquois" which had been used by previous researchers, in favour of the designation "St. Lawrence Iroquoians"; the latter being a more accurate term for this ethnic group who were neither Iroquois ethnically or Laurentian in the geographical sense (Trigger 1968, 1972). His syntheses of the available archaeological and ethnohistoric evidence have generally favoured the view that the St. Lawrence Iroquoians were not major players in the European fur trade (Trigger 1976:219, 1985:128).

Finally, this author's involvement in St. Lawrence Iroquoian research has included a number of projects (J. Jamieson 1980, 1983), but of most note has been a re-evaluation of St. Lawrence Iroquoian ceramic chronology based on the analysis of a small sample of ceramics from a stratified midden at the Steward site, in Morrisburg, Ontario (J. Jamieson 1982). The results of this work have implied that the orthodox version of St. Lawrence Iroquoian site chronology based on ceramic seriation may be reversed, although this remains contentious (see below). Finally, I recently have analysed the distinctive stylistic and functional attributes of bone, antler, tooth and shell artifact assemblages from the Maynard-McKeown, Roebuck, and Stewart sites and compared these with assemblages from contemporary Huron sites (J. Jamieson 1988).

Turning to the efforts of Quebec researchers, investigations of Quebec manifestations of the St. Lawrence Iroquoians have greatly expanded in recent years, beginning in the 1970's with a number of graduate theses coming

out of the University of Montreal. Hugette Trudeau (1971) analyzed the ceramics from the Lanoraie site and compared them with those from eight other St. Lawrence assemblages. Trudeau's major contribution lies in her refinement of the analysis of ceramics from Iroquoian sites on the lower St. Lawrence, and in the definition of a French terminology for this material. Laurent Girouard (1975) followed Trudeau by reporting on the findings from the St. Lawrence Iroquoian fishing station component documented at Pointe de Buisson, just to the southwest of the Island of Montreal. Both Girouard and Trudeau are noteworthy for the concerns they expressed over what they saw as the dangers of treating the St. Lawrence Iroquoians as a single group in the face of evidence pointing to obvious geographic differences. This call for an awareness of regional distinctions has carried through into the later work from Quebec.

Like Trudeau, Roger Marois (1978) examined the use of ceramic terminology and offered a seriation of St. Lawrence Iroquoian ceramics from the Beaumier and other sites. Like Girouard, Marois adopted a regional approach for comparative purposes. Further criticism of the use of a broad spatial approach to the analysis of St. Lawrence Iroquoian sites was offered by Claude Chapdelaine (1980). Chapdelaine (1980:150) pointed out that the territory occupied by the cultural manifestations which had been loosely referred to as St. Lawrence Iroquoians is so vast that it is wrong to think of them as a single homogeneous group. Moreover, he suggested that little is known about the origins and early developments of these sedentary Iroquoian "groups," due to a gap in the database related to the important Early Iroquoian period in this region (Chapdelaine 1980:145). Chapdelaine (1980:150) suggests that separate Pickering and Owasco influences may be at the roots of at least two different geographic areas of the St. Lawrence Iroquoian development: those west of Lake St. Louis and those east of it.

The 1980's have also seen an increase in the number of sites excavated and documented, appearing in the form of reports to the Quebec Ministry on Cultural Affairs, as a result of increased CRM work in the province. These include sites within the old sections of Montreal and Quebec City (Brossard and Page 1982; Clermont and Chapdelaine 1979; J. Jamieson 1987), between Montreal and Quebec City (Benmouyal 1982; 1983; Clermont et al. 1983, 1986), and on the lower St. Lawrence and the Saguenay (Chapdelaine 1984; Plourde 1987).

Most recently, Chapdelaine (1988, 1989, 1990) has completed detailed research on a single, extensively excavated, St. Lawrence Iroquoian site. The work documents the material culture, chronology, settlement patterns and osteology of the Mandeville site near Tracy, Quebec and considers it in relation to the McIvor site, located in eastern Ontario. In addition to underlining the differences in these two regional expressions of the St. Lawrence Iroquoians, Chapdelaine attempts to deal with the difficult issue of site chronology, tending to support the more traditional ordering of sites laid out by Pendergast.

While work on this archaeological manifestation has progressed, St. Lawrence Iroquoian researchers are still faced with a number of issues yet to be resolved. In particular, questions concerning the origins of St. Lawrence Iroquoian development, site chronology, site distribution and the relationship of the St. Lawrence Iroquoians with other Native groups in the Northeast still remain vague. It would be imprudent to attempt to answer definitively any of these questions in this chapter, and as a result the following review of St. Lawrence Iroquoian archaeological manifestations in southeastern Ontario, northeastern New York and southern Quebec necessarily will be summary in form. Readers are encouraged to review the literature cited for more detailed discussions of the material presented here.

Material Culture

The material culture of the St. Lawrence Iroquoians is similar to other Late Woodland Iroquoian groups in the Northeast, but can be distinguished by: a) its finely manufactured and decorated ceramics, often characterized, although there may be temporal and spatial variability, by the frequent use of circular punctates (e.g. Figure 12.2a, 12.3), chevron designs (Figure 12.2), "high" collars, and "pinched" or serially-ridged bases to collars (e.g. Figure 12.2); b) a paucity of chipped lithic tools; and c) a high frequency and variety of bone and antler artifacts. Nevertheless, on a general level, St. Lawrence Iroquoian material culture can be described as fairly "typical" of the horticul-

turally based Iroquoian groups who occupied the Northeast during the Late Woodland. Consequently, only broad trends and deviations from patterns seen for other Iroquoians (i.e. see Lennox and Fitzgerald, and P. Ramsden: this volume) will be presented here.

Between the time of MacNeish's (1952a) early work on ceramic trends during the Iroquoian Late Woodland and Pendergast's work on the Salem, Grays Creek and Beckstead sites (1966), comprehension of what distinguished St. Lawrence pottery from other groups was nil. In an effort to clarify the seemingly large number of decorative types defined, Pendergast divided his three site assemblages into four basic ceramic groupings. As a means of describing the wide range and variety of decorative motifs encountered, these four basic types are still useful.

Pendergast's Type A (Figures 12.2a,b & 12.3) is defined as "sophisticated incised chevron decorated pottery frequently incorporating punctate circles on classic overhanging castellations; well-defined medium and even high collars are common" (Pendergast 1966:81). Type B is similar in decorative motif to Type A, but decoration is applied using a dentate stamp, or a mixture of dentate stamps and incised lines (Pendergast 1966:81). Type C vessels are characterized by low collared or collarless rims, decorated with dentate, corded, ovoid or rectangular stamps on the collar of collared vessels, or at the top of collarless vessels (Figures 12.3 & 12.4). Paddle edge impressions also occur, as do cord-wrapped stick stamp decorations. Occasionally collars can also be plain. Lip decorations are common (Pendergast 1966:81). The final category, Type D, is characterized as consisting of relatively crude vessels with low convex collars, tending to be channeled (e.g. concave) on the interior collar and decorated with horizontal or oblique lines of chevrons executed in push-pull. Other techniques employed include cord-wrapped stick impressions and rough incising, sometimes crescent-shaped, suggesting the use of a fingernail. Local variants of Ontario Horizontal and Dawson Incised occur in this Type, as do crude examples of Durfee Underlined and Onondaga Triangular (1966:81).

Generally, Pendergast (1966:81-83) has suggested that Types B and D date earlier in the St. Lawrence Iroquoian Late Woodland. More specifically, Pendergast has stated that earlier ceramic assemblages are marked by an emphasis on stamped decoration, a lack of push-pull, and some evidence of check stamped body treatment, as seen on sites such as Salem and Beckstead (Pendergast 1966:85, 1972b:270). Linear stamping is believed to be an early to middle trait, while later sites can be defined generally by an increasing conservatism in the use of decoration, and specifically by a lack of dentate stamp, a wide variety of collar shapes, generally high collars, a lack of lip decoration, and a tendency for medium length necks and carinated shoulders (Pendergast 1972b:159, 1973:5). By the mid-16th century some St. Lawrence Iroquoian sites also begin to exhibit Huron influences (Pendergast 1973:6, 1975:48).

Roger Marois (1978) has also offered a general seriation for St. Lawrence Iroquoian ceramics. Beginning at about A.D. 800, Marois sees vessels characterized by a lack of collars or castellations, a preponderance of cord-wrapped stick and dentate stamp decoration, the presence of exterior punctates, and decorative motifs dominated by obliques and criss-crossed patterns. Between A.D. 1000-1200, linear stamping rises in popularity, although basic morphology remains the same (Marois 1978:81). Decorative motif varieties popular during this period include obliques and criss-cross patterns, as well as crossed motifs and criss-crossed with horizontals. Between A.D. 1200 and 1400 castellations and collars appear, and incising greatly increases in popularity. Decorative motifs are dominated by obliques, criss-crossed, horizontals, verticals, and combinations of these. The final one hundred years is seen as similar to the 1200-1400 period, although there is a notable rise in the use of chevrons as a decorative motif (Marois 1978:83).

At a very broad level, the sequences offered by both Pendergast and Marois are not dissimilar to the general pattern of Iroquoian Late Woodland ceramic development seen for the rest of southern Ontario (see Williamson, Dodd et al., Lennox and Fitzgerald, and P. Ramsden: this volume), and the Pendergast seriation has generally been supported by other researchers (e.g. Chapdelaine 1988). However, the data from the stratified midden levels at the Steward site in eastern Ontario suggest that several of the temporal trends identified by Pendergast actually may be reversed. For instance, the results from the Steward site study suggest that collars and castellations are an early rather than late attribute, and that lip decoration increases, not decreases through time (J. Jamieson 1982:73,78). Conse-

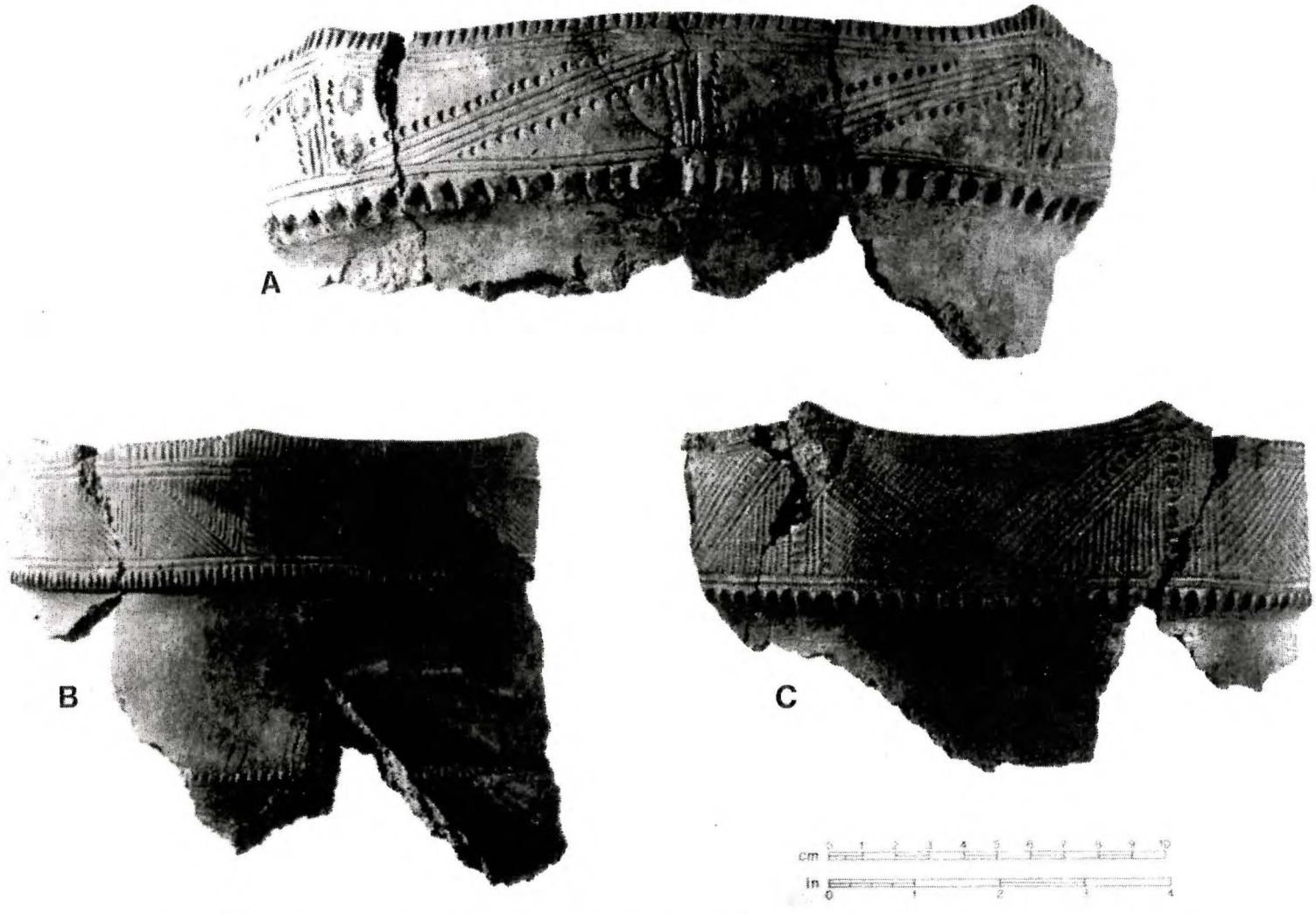

FIGURE 12.2: Complex, High-Collared Rims. Note "pinched" bases to collars. Courtesy of Dr. James V. Wright and the Canadian Museum of Civilization, Ottawa.

FIGURE 12.3: Rim Segment Showing Incised Chevron and Circular Punctate Motifs. Courtesy of Dr. James V. Wright and the Canadian Museum of Civilization, Ottawa.

quently, any discussion of St. Lawrence Iroquoian ceramic seriation must be, at present, approached cautiously. Clearly no definitive answers can be offered here, and we greatly need more assemblages associated with secure dates to further define St. Lawrence Iroquoian ceramic seriation. As well, Quebec researchers such as Chapdelaine (1980, 1988, 1990:58) are likely right in calling for caution and a more regionally specific approach to such efforts. However, until such time that regionally defined ceramic sequences are available, St. Lawrence Iroquoian researchers will have to rely on the more general models available.

The fine craftsmanship found in St. Lawrence Iroquoian ceramic vessel technology is also reflected in the quality of ceramic pipes documented for this group (Figure 12.6). These range in style from trumpet (Figure 12.6a) and vasiform varieties to more complex effigy forms (e.g. Chapdelaine 1988; Emerson 1967; J. Jamieson 1982, 1987; Pendergast 1966, 1972b, 1981, 1984; Wintemberg 1936a; see also Matthews 1980 and Noble 1979; see Figure 12.6b,d,e). Pottery gaming discs or counters are also frequently found on St. Lawrence Iroquoian sites, as well as ceramic beads. These two types of artifact would appear to be found in significantly greater numbers on St. Lawrence sites than on other Iroquoian sites.

St. Lawrence Iroquoian lithic assemblages do not appear to be well developed, although to what extent this reflects a skewing in the archaeological data as opposed to a real deficiency, perhaps partly precipitated by a lack of

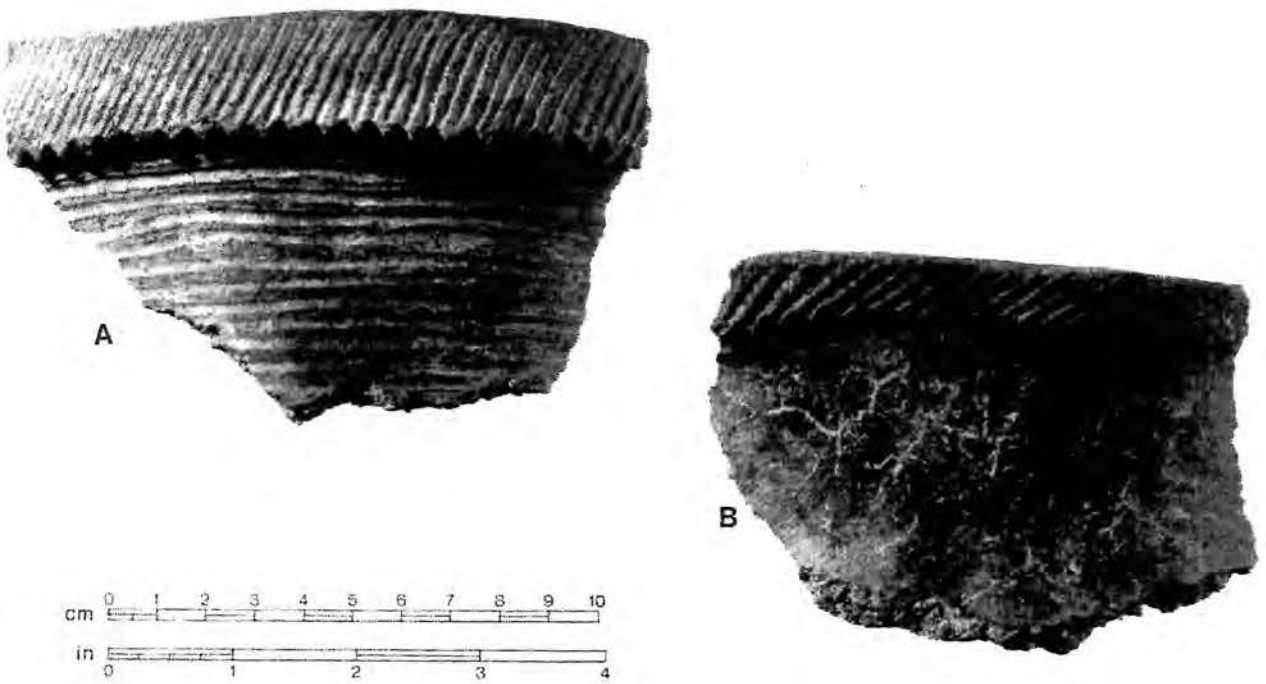

FIGURE 12.4: Stamped and Incised Low Collared and Collarless Ceramic Vessel Rim Segments. Courtesy of Dr. James V. Wright and the Canadian Museum of Civilization, Ottawa.

availability of quality cherts, at least in some regions of the St. Lawrence geographic range, is difficult to determine at present. In general, the recovery of projectile points and scrapers from St. Lawrence Iroquoian sites is rare, as are less formal tools manufactured from chert. However, red slate is often utilized to manufacture a variety of items from small knife-like objects to beads. Mudstone and steatite is also frequently used to produce stone discs (probably counters or gaming pieces), and stone beads. These characteristics of St. Lawrence lithic assemblages tend to distinguish them from the lithic assemblages documented on other Iroquoian sites.

In contrast to the lithic assemblage, bone, antler and ivory artifacts abound on St. Lawrence sites. Indeed, bone and antler are the preferred raw materials for tool manufacture. It is possible that this preference is a result of less readily available sources of quality cherts in the St. Lawrence Valley but there may also be unknown cultural and historical reasons to explain this distinction.

Two unusual and thus distinctive bone artifact types in St. Lawrence Iroquoian assemblages include rectangular and spatulate-shaped bone objects, marked by flaking along their lateral edges accompanied by usewear polish (e.g. J. Jamieson 1988; Pendergast 1972b, 1984; Wintemberg 1936a). These were probably used to scrape hides, or alternatively to scrape corn kernels from cobs in the same manner as a deer mandible corn scraper (Emerson 1967:133; Pendergast 1966:34; Wintemberg 1936a:48).

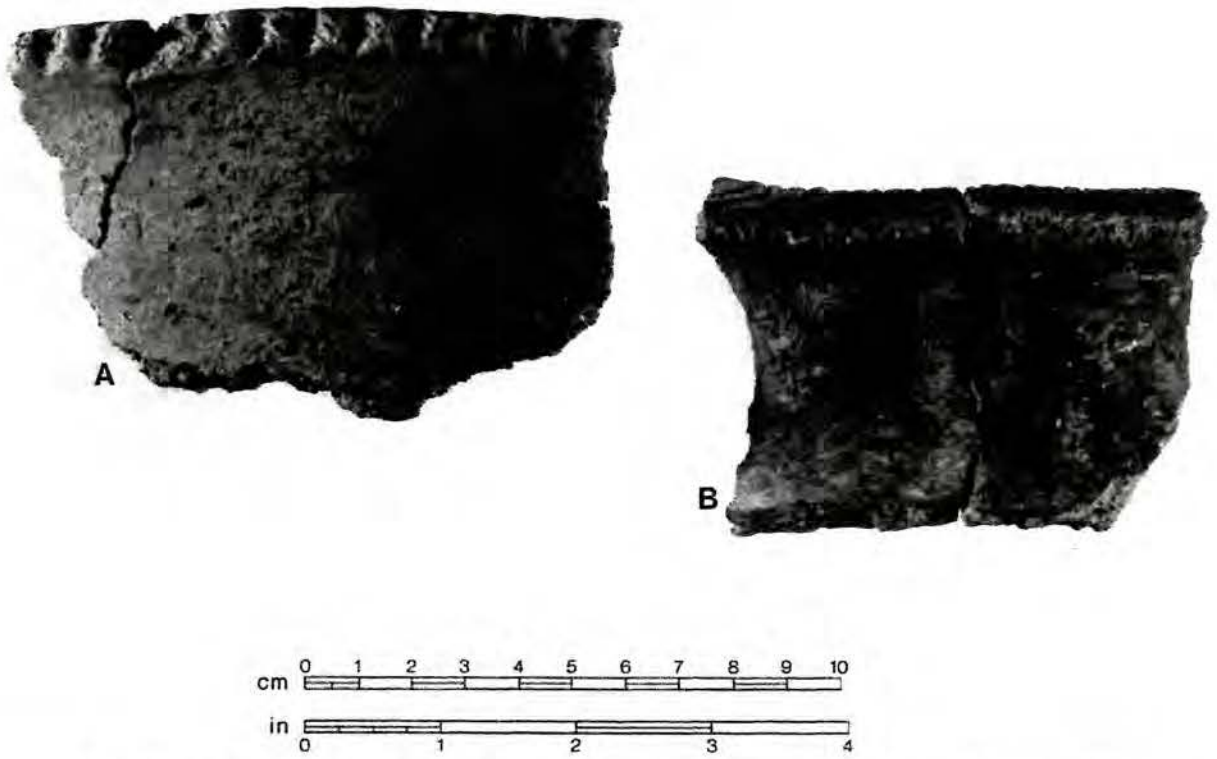

FIGURE 12.5: Low Collared and Collarless Ceramic Vessel Rim Segments. Courtesy of Dr. James V. Wright and the Canadian Museum of Civilization, Ottawa.

Another distinctive bone artifact type is the deer scapula pipe (Wintemberg 1936a:84, Plate XV, no. 39). These unusual objects consist of the spine and glenoid cavity of deer shoulder blades which have been charred and drilled at either or both ends. Many examples appear to be incompletely worked. This raises the possibility that they were not used as smoking pipes but for some other purpose. Although they also occur on sites of neighboring Iroquoian groups, their numbers are insignificant by comparison.

Other bone and antler objects, such as awls and points (Figure 12.7), are pan-Iroquoian in their occurrence, although frequencies and craftsmanship of these artifact types do vary (e.g. J. Jamieson 1988; Emerson 1967; Pendergast 1966, 1981; Wintemberg 1936a). For instance, tubular bone beads are much less frequent on St. Lawrence sites, as are drilled deer phalanges (e.g. Emerson 1967). Toggle type phalanges predominate. In contrast, fragments of rattles, generally comprised of discs cut from human skulls, are much more numerous on St. Lawrence sites than on other Iroquoian sites (J. Jamieson 1983). These are most often found in conjunction with scattered human bone from midden deposits on the large, palisaded and earthworked villages of the upper St. Lawrence Valley. As such, they are likely part of a warfare and prisoner-sacrifice complex characteristic of the late prehistoric period of Iroquoian development.

FIGURE 12.6: St. Lawrence Iroquoian Ceramic Pipes. A: Trumpet; B,D-E: Effigy Forms; C: Conical, Ringed Pipe. Courtesy of Dr. James V. Wright and the Canadian Museum of Civilization, Ottawa.

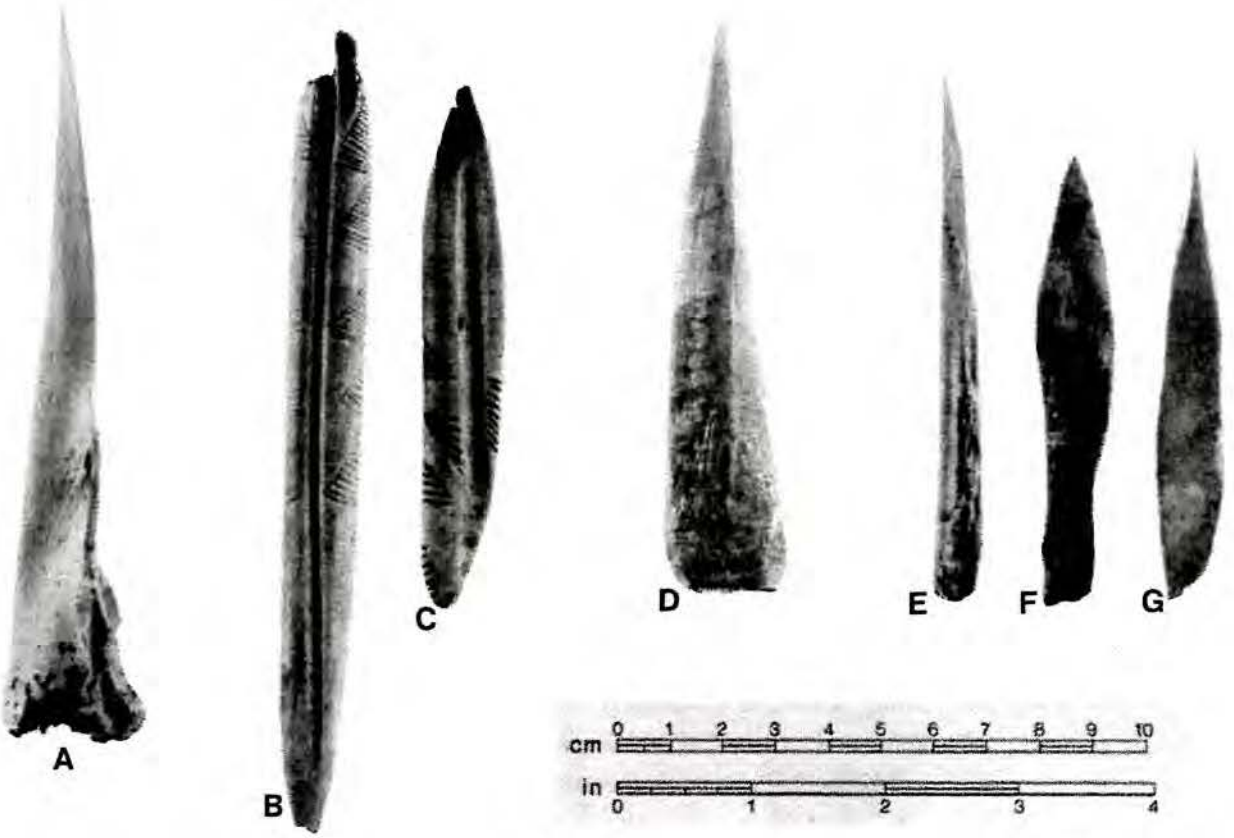

FIGURE 12.7: St. Lawrence Iroquoian Bone Awls and Points. Note chevron decoration on B and C. Courtesy of Dr. James V. Wright and the Canadian Museum of Civilization, Ottawa.

Settlement Patterns

Based on existing knowledge, there appears to be six regional clusters of St. Lawrence Iroquoian sites in southern Quebec, southeastern Ontario and northern New York state (Figure 12.1). These are: 1) on the lower St. Lawrence River between Ile aux Coudres and Portneuf; 2) between Portneuf and Montreal Island, including the lower Richelieu River; 3) on the middle St. Lawrence River between Montreal Island and Lake St. Francis; 4) on the upper St. Lawrence at the west end of Lake St. Francis; 5) on the upper St. Lawrence around Prescott, Ontario; 6) at the eastern end of Lake Ontario in Jefferson County, New York state. Some of the known archaeological sites, and summary characteristics for each, are given in Table 12.1. Unfortunately, an accurate understanding of the interrelationships of these sites has been complicated by the continuing uncertainties regarding St. Lawrence Iroquoian chronology.

Additionally, it also should be mentioned that Pendergast (1990) has recently suggested a possible seventh cluster of St. Lawrence Iroquoian sites, located around Lake Champlain in Vermont. This is based on reported surface collections and isolated pot discoveries from less than a handful of sites in Vermont, which Pendergast argues exhibit striking similarities to St. Lawrence Iroquoian ceramics (Pendergast 1990:101-103). These collections thus may represent a local St. Lawrence Iroquoian population in upper Vermont, perhaps even living alongside local,

TABLE 12.1: Characteristics of Select St. Lawrence Iroquoian Sites.

SITE	SIZE IN HECTARES	PALISADE PRESENT	EARTHWORK PRESENT	SITE FUNCTION
East of Montreal Island:				
Lanorie	>1	No	No	Village
Beaumier	>1	No	No	Camp
Masson	>1	No	No	Village
Mandeville	>1	No	No	Village
Montreal Island and West:				
Dawson	2	?	?	Village
Pte-de-Buisson 2	>1	No	No	Camp
Salem	2.5	?	No	Village
Glenbrook	1.25	?	?	Village
Grays Creek	>1	No	No	Camp
Summerstown Station	>1	No	No	Camp
Berry	>1	No	No	?
Beckstead	2.0	Yes	Yes	Village
Roebuck	3.25	Yes	Yes	Village
Cleary	3.0	Yes	Yes	Village
27/VII	2.0	Yes	No	Village
Crystal Rock	1.0	?	No	Village
McIvor	1.2	Yes	No	Village
Maynard-McKeown	2.5	Yes	Yes	Village
Steward	>1	No	No	Camp

Algonquian-speaking Abenaki. Pendergast has even suggested that at the start of regular European contact on the St. Lawrence (ca. A.D. 1580), the Lake Champlain St. Lawrence Iroquoians were destroyed by Mohawks, who were trying to gain direct access to Europeans (and thus European goods) on the St. Lawrence (Pendergast 1990:119-120). However, given present limitations in even defining St. Lawrence Iroquoian ceramics, as discussed above; given the small database to go on for Vermont, lacking even a single site excavation; and given that other researchers have pointed to the tendency of neighbouring Algonquian groups to imitate or even obtain Iroquoian ceramic vessels (e.g. Murphy and Ferris: this volume; Fox: Chapter 14); it may be extremely premature to speculate on whether or not a St. Lawrence Iroquoian community existed alongside local Abenaki populations in the upper Vermont area.

Returning to the six confirmed clusters of St. Lawrence Iroquoian sites, while we know from the accounts of Jacques Cartier that the Quebec City and Montreal areas were occupied at the time of early European contact, it has not yet been possible to make positive correlations between archaeological sites and the villages Cartier described. Nevertheless, Cartier's account of the settlements along the St. Lawrence supports, in a general way, the emerging pattern observed from the archaeological record. Sites located east of Montreal Island usually are smaller, unpalisaded settlements of a few longhouses (e.g. Figure 12.8), located about 1-2 km inland from the St. Lawrence River. The

Lanoraie, Mandeville and Masson sites are good examples of this type (Benmouyal 1982, 1983; Chapdelaine 1988, 1989, 1990; Clermont et al. 1983).

Sites documented in the region from Montreal Island to Lake Ontario tend to be comprised of two distinct types -- large villages situated in the interior, and small special purpose occupations such as fishing stations, located on the St. Lawrence and other major waterways. Unfortunately, only a few documented examples are available to illustrate these site types. A good example of the small special purpose fishing camp is the Steward site located near Morrisburg, Ontario. Two longhouses were documented at the site, measuring about 2 to 4 meters longer than longhouses documented at large inland sites like Roebuck (J. Wright 1972e:7). The Steward longhouses also appear to have a less dense concentration of internal house-pit features than observed for village site locations (J. Wright 1972e:7). The faunal analysis of material from the site's stratified midden deposit (P. Wright 1981) revealed a high percentage of fish remains, particularly eel, pointing to a spring and early summer occupation (Junker-Anderson 1985). The presence of a deeply stratified midden, with distinct temporal layers, suggests that Steward was occupied seasonally and/or sporadically over a few hundred years (J. Jamieson 1982).

By way of contrast, the large, palisaded village site type is located away from rivers in positions of easy defense. In this respect, these villages closely resemble those of their Iroquoian neighbors further west in Ontario. A good example of this type of settlement is the Roebuck site (Figure 12.9). One of several late prehistoric St. Lawrence Iroquoian sites clustered together in the Prescott area, this 3.25 hectare village was first reported by W.E. Guest in 1854, and investigated by W.J. Wintemberg and Harlan I. Smith in 1912 and 1915 and by J.V. Wright in 1970. The site is situated on a sandy ridge surrounded on three sides by low swampy land. Up to three rows of palisade protected the village on all sides in addition to a semi-circular earthwork across the neck of land connecting the site to high level ground (J. Wright 1979b:69; Wintemberg 1936a:7). Within the palisade are about 40 longhouses ranging in length from 18 to 41 metres, as determined by wall trench excavations conducted across the entire site by J. Wright in 1970. The site has been interpreted as accommodating, during its peak period of use, up to 2000 people (J. Wright 1979b:69). Other palisaded sites in the Prescott cluster are McIvor, Cleary, 27/VII and Maynard-McKeown. Earthworks and palisades have also been reported for sites in the Lake St. Francis and Jefferson County regions (Engelbrecht et al. 1990:75; Pendergast 1984:155, 1985:23).

The most recent investigation of a St. Lawrence Iroquoian village site was conducted by Pendergast on the Maynard-McKeown site. This site is a 1.6 hectare village surrounded by multiple rows of palisade and defensive ditches (Pendergast 1988:12). About one quarter of the village was excavated, revealing 23 closely spaced longhouses. At some point during its occupation, it appears that the village underwent a spatial expansion, incorporating several new longhouses, as a result of a suggested population influx into the village (Pendergast 1988:14-15). Some of the longhouses also show evidence of being extended. Likewise, during the second period of occupation, the palisade walls were extended and expanded. It is possible that this increase in population at Maynard-McKeown was the result of an influx of people from neighboring villages. Indeed, the Maynard-McKeown site, along with the Roebuck, McIvor, Cleary, 27/VII, and Crystal Rock sites, appear to represent a sequential occupation of one or perhaps two village populations occupying the upper reaches of the South Nation River over a long period of time.

Pendergast (1975) has proposed a settlement-subsistence developmental sequence for St. Lawrence Iroquoian sites from Montreal Island westwards. He has argued that early in the St. Lawrence Iroquoian Late Woodland (ca. A.D. 1250), occupations consisted primarily of the smaller camps. Their location on the banks and islands of the St. Lawrence suggests that these people followed a riverine-based diffuse economy, exploiting all available resources at a given locale (Pendergast 1975:47). Examples would include Middle Ontario Iroquoian sites such as Treasure Island and Ault Park. By A.D. 1350, increasing influences from Middle Iroquoian groups to the west and south led local St. Lawrence Iroquoian groups to modify their settlement-subsistence strategies. As a result, riverine-oriented sites declined in use, and were replaced by small, agriculturally-oriented inland villages and campsites such as Berry and Beckstead. This event was followed by large population increases, which gave rise by the middle of the 15th century A.D. to area clusters of village sites in parts of the St. Lawrence River valley not previously occupied by St. Lawrence Iroquoian groups (Pendergast 1975:48). These clusters are characterized by small, seasonally occupied special purpose camps (such as Steward) associated with major villages (such as Glenbrook or Roebuck). These vil-

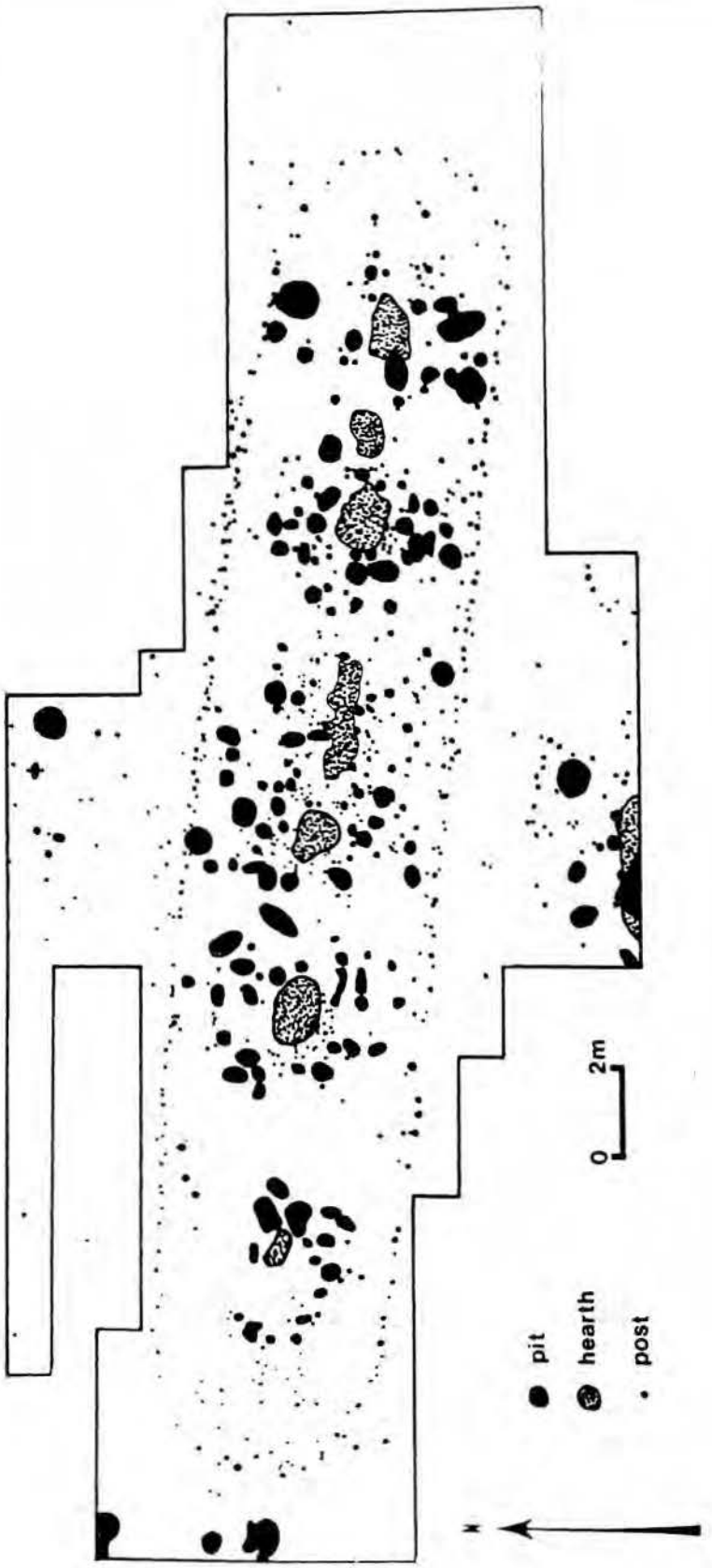

FIGURE 12.8: Longhouse at the Lanorie Site. Redrawn after J. Wright (1979b).

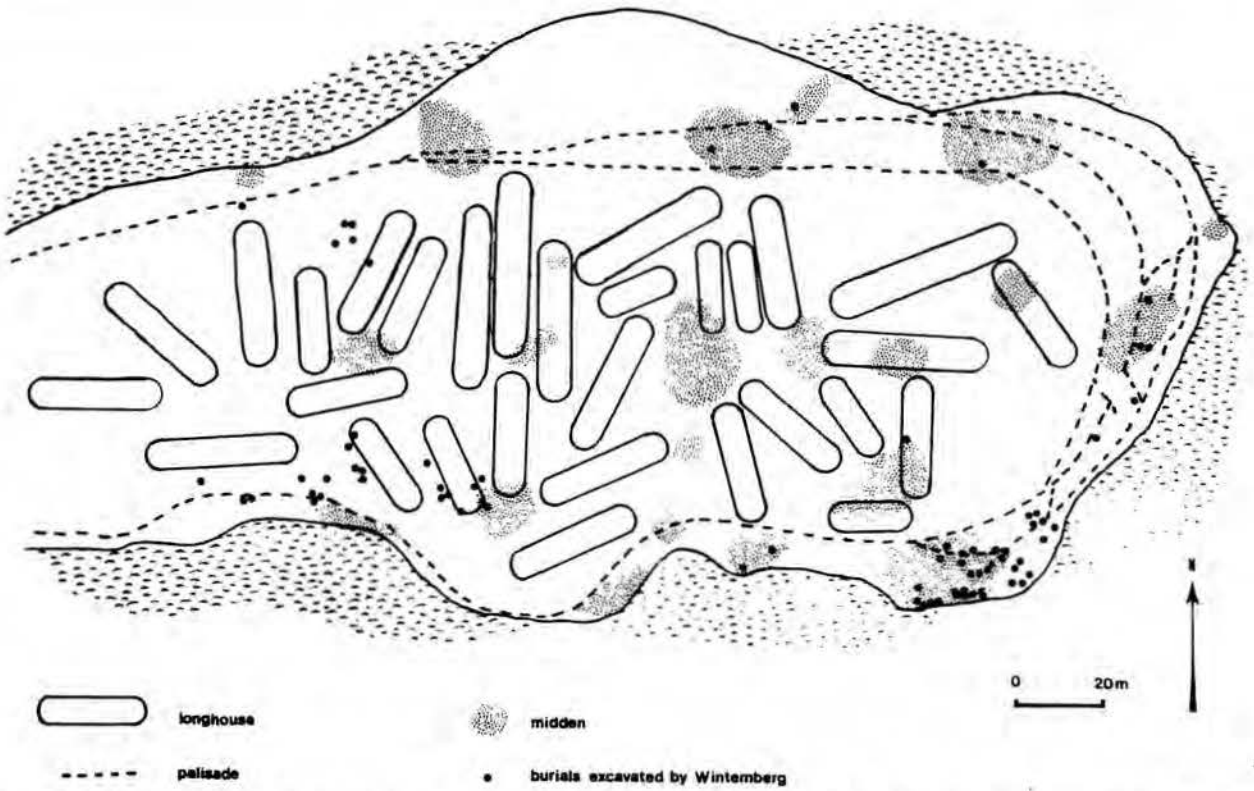

FIGURE 12.9: Map of the Roebuck Site. Redrawn after J. Wright (1979b), with additions from Wintemberg (1936a).

lage clusters occur just west of Lake Francis in the Summerstown area; near Prescott by the lower South Nation River; and in Jefferson County, New York state. Pendergast (1975) has suggested that the appearance of the Prescott site cluster probably represented a westward migration of the Summerstown people, who moved to take advantage of the more agriculturally suited sandy soils of the lower South Nation River.

The distinction between sites east and west of Montreal has traditionally led researchers to associate sites to the east as generally related to the antecedents of the Stadaconan community, while the western sites were thought to be associated with the antecedents of the Hochelagan community. However, Chapdelaine has recently argued that a third, central group can be defined, centered along the St. Lawrence River in the Lac St. Pierre region east of Montreal Island and west of Quebec City (1990:60). This region he has labelled the Maisouna province. Chapdelaine argues that sites in this region, such as Mandeville and Lanoraie, exhibit several differences from western St. Lawrence Iroquoian sites such as Dawson, both in terms of settlement patterns and material culture traits. Also, the sites in Maisouna are likely distinct from the Quebec City cluster of sites, although he indicates that information available for those eastern sites is too poor to allow for meaningful comparisons (1990:61). While this proposal needs to be tested by a great deal more site excavations in the region, it does underscore the growing theme in St. Lawrence Iroquoian archaeology that researchers cannot simply subsume all Late Woodland manifestations found along the St. Lawrence River under one cultural grouping. Definitions of regional groups (or provinces) and an understanding of variation between groups may well go a long way to clarifying present confusion over St. Lawrence Iroquoian development (Chapdelaine 1990:53-55).

Mortuary Patterns

Like so many things about the people collectively referred to as the St. Lawrence Iroquoians, burial practices are largely unknown at present, with the Roebuck site excavations providing the bulk of the available data (Knowles 1937; Pendergast 1983; Wintemberg 1936a; see Figure 12.9). Eighty-four individuals were recovered, consisting of forty-three adults (39 women and 4 men), and forty-one non-adults (including 4 sub-adults, 3 females and 1 male; Knowles 1937:8). These burials were, for the most part, flexed single interments scattered throughout the village, within houses and under midden deposits. There is an obvious bias against adult males in the Roebuck population, and this discrepancy in sexual representation has led Pendergast (1983:54) to suggest that adult males may have been buried outside of the village, possibly in ossuary pits. This pattern of burial appears to be typical of other sites (J. Jamieson 1980:19; Pendergast 1972b:155, 1983:52; Squire 1851:25). As well, it may be that ossuaries, set away from villages, still remain to be located for St. Lawrence Iroquoian sites like Roebuck.

In addition to the burials from Roebuck, there is evidence that a further minimum of 35 individuals are represented by scattered burnt, hacked and gnawed bones found in midden deposits at the site (J. Jamieson 1983:173; Knowles 1937:4; Pendergast 1983). These remains have been interpreted as the remnants of prisoners tortured and sacrificed by the Roebuck village inhabitants (J. Jamieson 1983:159). This kind of evidence in conjunction with the presence of earthworks and palisades on other St. Lawrence Iroquoian villages underlines the concern for defense typical of neighboring Iroquoian groups to the south and west during the late prehistoric period.

Francis Knowles' analysis of the skeletal material from Roebuck indicated that the population was of Iroquoian stock (1937:14), as did J. Anderson's analysis of the Dawson site osteological collection (1972:319). More recently, an examination of inter-group affinities based on discontinuous cranial morphology suggest that the St. Lawrence Iroquoians share a Pickering ancestry, along with other Ontario Iroquoian groups closely related to Huron and proto-Huron populations (Molto 1983:256-257). Presently, excavation and analysis of burials has become sensitive and difficult, and until the various interest groups concerned with this issue can resolve their differences, it is impossible for us to advance our knowledge of St. Lawrence Iroquoian mortuary patterns beyond this point.

St. Lawrence Iroquoian Chronology

As discussed throughout this chapter, our understanding of the St. Lawrence Iroquoians is hampered by an inability on the part of researchers to adequately define and agree on an archaeological chronology for this group. The traditional interpretation of St. Lawrence Iroquoian chronology was developed by Pendergast in the 1960's and 1970's, and was primarily based on ceramic seriation (Pendergast 1966, 1975). Based on his 1975 work, Pendergast (1975:54) proposed the following sequence of key St. Lawrence Iroquoian sites: the Berry site is seen to date around the middle of the 1300's, while Salem, Beckstead, Roebuck and Summerstown Station, in that order, date from the early to late 1400's. McIvor is believed to date shortly after 1500, followed by Glenbrook and then Dawson, which is thought to date to roughly the same time that Cartier visited the St. Lawrence Iroquoians.

In Pendergast's (1975) seriation, the Dawson site was assumed to represent the end of the sequence, since it had yielded some supposed European trade goods, and thus was felt to date to the middle of the 1500's. However, this assumption is based on accepting the association of European trade goods with the aboriginal material from the Dawson site. This association can be questioned. For instance, Kidd's (1972:331-332) analysis of the European goods from Dawson enabled him to say only that they were post-contact and probably French in origin, but they could not be definitely assigned to the sixteenth century. Furthermore, recent excavations at Place Royale in Old Montreal documented a small St. Lawrence Iroquoian component exhibiting strong similarities to Dawson, on the basis of rimsherd and pipe types (J. Jamieson 1987). However, no European goods were found in association with this component. Whether this is due to the small size of the Place Royale site or not is open to debate. Overall, however, the lack or presence of European goods on St. Lawrence Iroquoian sites may well be a meaningless criteria for determining an end-date for the chronology of this group. Given the likely paucity of European goods which would have been available to and used by those St. Lawrence Iroquoians who briefly came into contact with the French

during the 1530's and early 1540's, it may well be that archaeologists will never find European manufactured artifacts that can be definitively associated with the mid-sixteenth century.

Further problems with defining St. Lawrence Iroquoian chronology stem primarily from the confusing results of radiocarbon dates. While a large number of radiocarbon dates have been obtained from St. Lawrence Iroquoian sites, a relatively high frequency of these have been rejected - a higher frequency than for other Ontario Iroquoian groups (Timmins 1985:141). In part, this is likely due to technical difficulties; however, the type of samples obtained and some of the methods used to collect samples can be questioned. For example, a large number of dates were obtained from sources other than wood charcoal, such as corn kernals, beans and cherry pits. These can be affected by fractionation, which would skew the results (Timmins 1985:150). Timmins also points out that dates from Roebuck, Glenbrook, Summerstown Station and possibly Dawson were obtained from samples which had been collected from several areas across the site, which increases the potential for obtaining bad dates. Finally, the tight seriation in which these dates are expected to fit (roughly 250 years following Pendergast's sequence), has led to the rejection or acceptance of dates based on results which varied by less than a 100 years from the anticipated results. Rejecting dates solely on preconceived notions of chronology make it difficult to refine that chronology.

As mentioned earlier, radiocarbon dates obtained from a stratified midden at the Steward site helped define a ceramic seriation which in several ways reverses the Pendergast model (J. Jamieson 1982). Furthermore, in his review of radiocarbon dates obtained from St. Lawrence Iroquoian sites, Timmins (1985:155) has noted that the Steward generated site sequence is similar to the sequence obtained solely from radiocarbon dates. This result does not necessarily imply that one sequence is more accurate than the other, since there are so many problems with the actual radiocarbon dates themselves (Timmins 1985:155). However, it does suggest that there are serious problems with our existing notions of St. Lawrence Iroquoian chronology. To correct these problems, researchers will have to address the continuing impasse over site and ceramic seriation, which may best be served by increasing the knowledge we have for specific regional groupings of St. Lawrence Iroquoian sites. If we can begin to define regional site sequences and material culture developments within those specific sequences, we then, presumably, will be able to better address the broader issue of general St. Lawrence Iroquoian cultural development through the Late Woodland.

Disappearance of the St. Lawrence Iroquoians

Several scenarios have been suggested to explain the disappearance of the St. Lawrence Iroquoians (A. Bailey 1933; Fenton 1940; Hoffman 1961; Innis 1956; Pendergast 1985; Pendergast and Trigger 1972; Trigger 1976, 1985). Most of these have postulated warfare and epidemic diseases as primary causes, although deteriorating climatic conditions have also been pointed to as a possible contributing factor (Barbeau 1949; Fenton 1940; Martijn 1969; W.R. Fitzgerald and Jamieson 1985). While no one has denied that the introduction of European diseases would have had an impact on the mortality of Native populations in the St. Lawrence Valley in the early years of exploration and contact, for reasons noted earlier most of the discussion has centered on conquest, resulting from economic motivations as the primary explanation. While this is due in part to the difficulty of detecting, and thus identifying the impact of disease in the archaeological record, it also reflects the vogue conquest theories held during the 1960's and 1970's, when most of these hypotheses were formulated.

These theories of conquest can be reduced to two distinct versions of a similar story of destruction and dispersal (see Trigger 1987: Plate 33). The first version proposes that the St. Lawrence Iroquoians were attacked by the Huron in an effort to dislodge them as middlemen in the early fur trade with Europeans on the lower St. Lawrence (Pendergast 1985:34; P. Ramsden 1977a:256-257; J. Wright 1972a:90, 1979b). The archaeological evidence cited for this is the presence of significant amounts of St. Lawrence Iroquoian pottery on late prehistoric Huron-Petun sites. The pottery is believed to have been made by St. Lawrence Iroquoian women who had been captured and adopted by their Huron enemies. At the same time, the absence of St. Lawrence Iroquoian pipes and thus, St. Lawrence men on these sites, is seen as further evidence of Huron conquest since only women would have been adopted by their captors, while men would have been sacrificed as part of the traditional warfare ritual. The frequent occurrence of human bone scattered throughout village middens on both Huron and St. Lawrence Iroquoian sites is also seen as evidence of intercine warfare between these two groups.

The second version of St. Lawrence Iroquoian dispersal suggests that they were attacked and dispersed by the New York Iroquois, also motivated by a desire to gain control of the St. Lawrence River valley and thus, European trade (Pendergast and Trigger 1972; Tooker 1964; Trigger 1976, 1985). St. Lawrence Iroquoian refugees are believed to have fled from the onslaught, ultimately joining with their Algonquian and Huron-Petun neighbours. Under this proposal, the presence of St. Lawrence Iroquoian pottery on Huron-Petun sites is believed to be the product of St. Lawrence Iroquoian refugees. On some Huron sites village expansions show a higher frequency of St. Lawrence ceramics and this has been interpreted as evidence of an influx of large numbers of St. Lawrence Iroquoians (Damkjar 1990; Trigger 1976:226; J. Jamieson 1983). It has also been suggested that some St. Lawrence Iroquoians joined the Algonquian speaking Ononchataronon, who at the time occupied the South Nation River valley, prehistoric territory of the Prescott St. Lawrence Iroquoians. As well, one 17th century source suggests that some St. Lawrence Iroquoian refugees may also have fled to the Abenaki (Trigger 1976:226).

I would add that a possible reason behind the decision made by at least a portion of the St. Lawrence Iroquoians to join with the Huron was because they may well have been allies and trading partners at this time, not enemies. Following this reasoning, the presence of St. Lawrence Iroquoian pottery on Huron sites would not have been the product of captive women, whom having been spared the agonies of torture or death would hardly continue to signal their ethnic affiliations to their adoptive families. Rather, this pottery may have been made by St. Lawrence Iroquoian women whom had married into Huron families (J. Jamieson 1990; P. Ramsden 1990). Alternatively, St. Lawrence Iroquoian pottery could also have arrived at Huron sites by way of trade. The point here is that captive women are only one likely reason behind the appearance of foreign ceramics on Huron sites.

Pendergast (1985:34-35) has noted that Huron and St. Lawrence Iroquoian ceramics and pipes enjoy a reciprocal distribution on sites located in the Trent Valley and Jefferson County. This distribution is attributed to a phase in the Huron - St. Lawrence conflict that permitted the adoption of both male and female captives (Pendergast 1985:35). Given the above, it may be more likely that Jefferson County pipes and ceramics on Trent Valley sites represent St. Lawrence Iroquoian refugees driven from their territory by League Iroquois enemies (J. Jamieson 1990; P. Ramsden 1990). It should be noted that their retreat preceded the abandonment of the Trent Valley by the Arenharonon groups of Huron, also in response to continued Iroquois aggression.

It has become apparent from the absence of European trade material on St. Lawrence Iroquoian sites that this group did not play a major role as middlemen in the early fur trade, and may well have been dispersed before any formal trade between Europeans and Natives could have been initiated. This has led some researchers, such as Heidenreich (see this volume), to question the basic claim that economic motivations fueled the conquest of the St. Lawrence Iroquoians, regardless of which group led the attack.

In searching for an answer to why the St. Lawrence Iroquoians disappeared during the 16th century, it is important to keep in mind that all Iroquoian groups were in the process of undergoing a major realignment of territories and population shifts in the century or two leading up to the time of European contact. The appearance of heavily fortified villages around the lower Great Lakes and upper St. Lawrence late in the prehistoric period suggests that this upheaval also was accompanied by increased and widespread conflict. The causes for this upheaval still elude us, although any number of factors may have helped precipitate it, with population pressure, climatic deterioration and competition for control of prehistoric trade networks or valuable resources, likely being primary factors (W.R. Fitzgerald and Jamieson 1985). It is difficult to accurately determine the specific impacts any of these factors may have had on the St. Lawrence Iroquoians, but it is reasonable to assume that the general upheaval late in the prehistoric period had its toll on this group. In addition, the likelihood of increased New York Iroquois aggression against this group during the 16th century, and the possibility that European diseases were passed on to the St. Lawrence Iroquoians by the French in the 1530's and/or early 1540's, were likely additional factors contributing to this group's disappearance.

However, our growing understanding of the distribution and evolution of separate site sequences has underlined the regional differences in St. Lawrence Iroquoian development. Thus, it is perhaps no longer valid to talk of the disappearance of the St. Lawrence Iroquoians as if they were a single monolithic group. Rather, it may well be

that a series of separate but related removals, culminating in the complete abandonment of St. Lawrence Iroquoian territories, more accurately describes the process that took place (J. Jamieson 1990; Trigger 1985). Therefore, it is likely that no single answer adequately explains what happened to all of the St. Lawrence Iroquoians, with specific groups responding to the events of the 16th century differently (see also Heidenreich: this volume).

No doubt archaeologists and historians will continue to offer new and differing reasons for the underlying causes behind this disappearance. Regardless of which scenario ultimately proves accurate, the fact remains that the St. Lawrence Iroquoians ceased to exist as a separate group before the end of the 16th century. However, they still survive through the efforts of archaeologists who continue to try to resolve the many gaps in the understanding of this group.

CHAPTER 13

THE CULTURE HISTORY AND ARCHAEOLOGY OF THE NEUTRAL IROQUOIANS

Paul A. Lennox and William R. Fitzgerald

Introduction

When Europeans entered southern Ontario early in the 17th century, one of the many Native groups they encountered were a large group of Iroquoian-speaking peoples who occupied the territory immediately west of Lake Ontario, throughout the Niagara Peninsula, and into the Niagara Frontier of New York state. This group was called "la nation neutre" by Champlain in 1615 because "between the Iroquois and our tribe (the Huron) they are at peace and remain neutral" (Bigger 1922-1936[3]:99-100).

The neighbours of these Neutral Iroquoians included, to the east, the Five Nations Iroquois, and to the west a number of Algonquian groups (see Murphy and Ferris: this volume). To the south the Neutral were bounded by the shores of Lake Erie. Their boundary with the Southern Division Huron (see Ramsden: this volume) to the northeast has not been clearly delineated for the 15th and 16th centuries; however, by the time of European contact a considerable distance separated the Neutral from their Huron neighbours. Contemporaneous Native groups were lacking in the area due north of the Neutral during both prehistoric and historic times and the northern boundary of Neutral territory appears to have corresponded closely with the northern extent of the Carolinian Biotic Province (see Figure 13.1; Karrow and Warner: this volume).

The 15th and 16th century ancestors of these Neutral Iroquoians can be identified archaeologically over a much wider area of southwestern Ontario than that known for the historic period, extending as far west as the City of Chatham. The Historic Neutral, therefore, represent the culmination of a number of distinctive Iroquoian groups which had developed during the Late Woodland Period from a Middle Ontario Iroquoian base around ca. A.D. 1400 (see Dodd et al: this volume). This development ended between 1647 and 1651, however, when the Neutral were dispersed by the Five Nations Iroquois.

If our knowledge of the Neutral was exclusively dependent on 17th century written records and cartographic sources it would be seriously incomplete and inaccurate. Unlike the written volumes of detail available for the period of European presence in Huron territory during the first half of the 17th century, European accounts of the Neutral are restricted to three documented incursions into the area: Samuel de Champlain's second hand account of Etienne Brûlé's 1615/1616 passage through Neutral territory (Biggar 1922-1936); Joseph de la Roche Daillon's account of his 1626 mission to the Neutral (Daillon 1866) and Jerome Lalement's, Jean de Brebeuf's and Pierre-Joseph-Marie Chaumonot's accounts of the latter two Jesuits' mission to the Neutral over the winter of 1640-1641 (Thwaites 1896-1901). G. K. Wright (1963) provides a thorough compilation of these historic sources.

None of these accounts can be considered insightful of the Neutral due to the obvious fact that none of the observers were ethnographers concerned with events that were not directly related to their undertakings. Inaccuracies were compounded by Daillon's necessity to communicate with hand gestures, and Brebeuf and Chaumonot's presence among the Neutral during a period of cultural disruption caused by climate and disease.

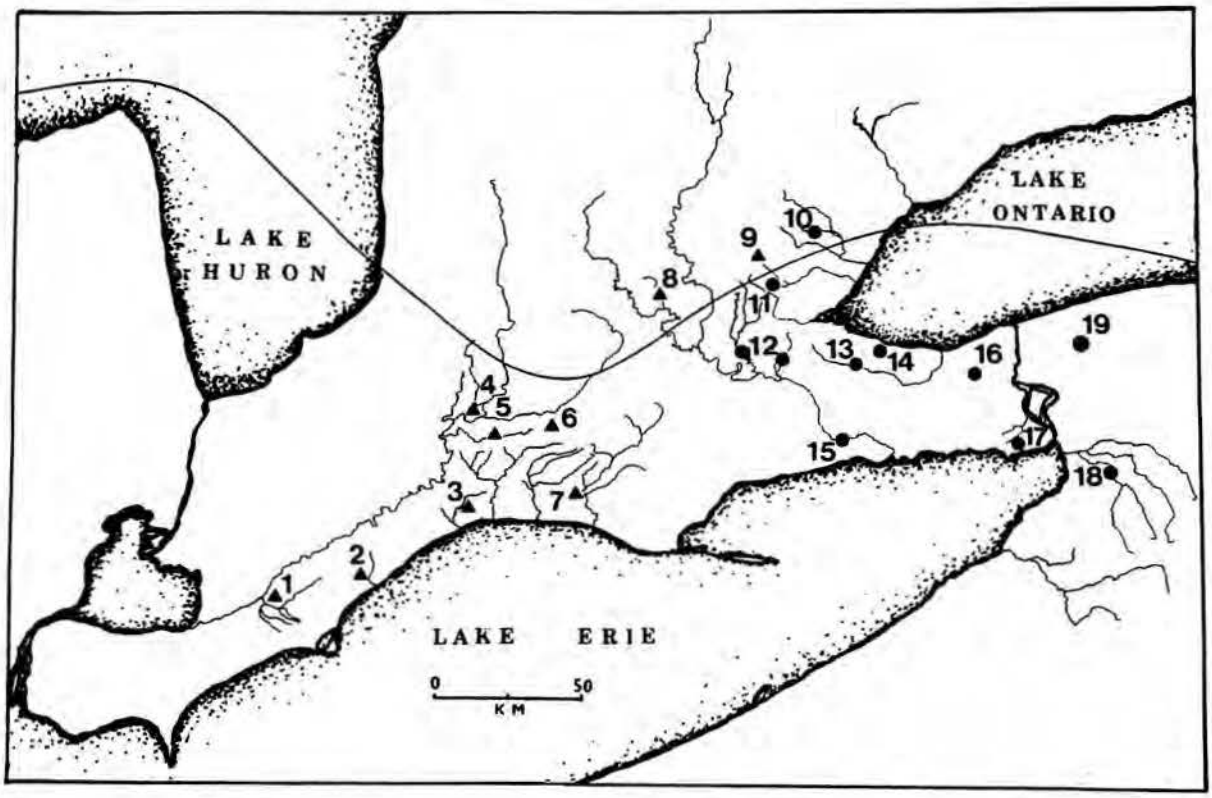

FIGURE 13.1: Distribution of Neutral Occupations. Prehistoric site clusters appear as triangles while dots represent areas of both prehistoric and historic sites. Table 13.1 provides a list of sites and references for each area. The line cutting across the area represents the northern limit of the Carolinian Biotic Province.

Other problems in relying on historical accounts arise from the result of the erroneous placement of the Jesuit's Neutral mission sites on Nicolas Sanson's 1656 map. This and other maps indicating Neutral occupations to be as far west as the St. Clair River (contrary to archaeological data) illustrates the extreme caution that must be taken when cartographic sources are used. There are, however, more accurate representations such as Bressani's 1657 and Hack's 1684 maps that provide a more appropriate 17th century distribution of Neutral settlements.

While historical accounts and maps provide some tantalizing bits of information about the Neutral, their spotty and sometimes inaccurate nature necessitates a virtual dependence on the archaeological record to achieve a greater understanding of this cultural group.

History of Research

The Neutral Indians have been of interest to archaeologists, historians and relic hunters since their villages were first disturbed by land clearing activities early in the 19th century. It was reported that the late 16th century Snider village and ossuary became the focus of illicit digging and looting activities as early as 1829 (J. Smith 1897:33). As late as 1838, portions of the wooden palisade surrounding the 17th century Mills or MacDonald village remained intact, a similar occurrence having been observed at the 17th century Hood village. Vast quantities of iron axes and copper and brass kettles were removed from both of these sites (Boyle 1888:11; J. Smith 1897:31-32). In 1843 the American ethnologist Henry Schoolcraft was taken to the Dwyer Neutral cemetery which had been looted as early as 1837 when a treefall exposed vast quantities of human bone (Schoolcraft 1848:324-327, 1851:103-104). Schoolcraft returned in 1844 and 1845 to recover additional artifacts (Schoolcraft 1851:75).

As in many other parts of southern Ontario, the first systematic archaeological investigations of the former Neutral territory were carried out by David Boyle. The reports of his endeavors on Neutral sites, most notably Dwyer, and museum accessions of Neutral artifacts appeared in the *Annual Archaeological Reports for Ontario* (Boyle 1888, 1889, 1891, 1897, 1902a,1902b, 1904, 1907a, 1907b; Orr 1914). In certain respects, Boyle's endeavors may be considered the first example of an archaeological salvage of a Neutral site, since he attempted to rescue information from an ossuary which was being destroyed by unsystematic excavation (1902b:23). David Boyle's biography (Killan 1983) provides numerous interesting details on the life and times of those who laid the foundations for Ontario Archaeology.

In the last decade of the 19th century, and the first quarter of the 20th century, Boyle's work on the Neutral was supplemented by the activities of a number of individuals. Frank Waugh (1903) reported on several village sites in the Hamilton-Brantford area. Wm. J. Wintemberg conducted extensive surveys in Waterloo and Oxford Counties (1900, 1901, 1903, 1913), and excavated on Late Woodland villages such as Uren (1928b), Southwold (1935), Lawson (1939), and Middleport (1948). While Uren and Middleport would not be regarded as "Neutral" today, they were used by Wintemberg in his attempts to place some order into the culture classification and chronology of Iroquoian sites. His familiarity with Iroquoian pottery across the province led him to identify four regional foci, each being associated with one of the four historically identified groups who occupied that particular area at the time of European contact (Wintemberg 1942). One of these was a "Neutral Focus" in southwestern Ontario which was temporally divided into Archaic, Transitional, and Late Pre-European phases, represented by the Uren, Middleport and Lawson sites respectively.

At the same time that Wintemberg and Waugh were documenting Neutral occupations in the London-Brantford-Kitchener area, Frederick Houghton was amassing an inventory of Native sites in the Niagara Frontier of New York state and along the western bank of the Niagara River in Ontario. He undertook the excavation of the mid-17th century Van Son cemetery on Grand Island (Houghton 1909). Less well known, however, is Houghton's 1915 foray into the Hamilton-Brantford-Kitchener area (field notes in the Buffalo Museum of Science). As a result of his exposure to the Neutral, two valuable, but generally unavailable, unpublished works provide a broad synthesis of Neutral settlement patterning and material culture (Houghton n.d.a, n.d.b). Houghton was the first to speak of a migration of Neutrals from the London-St. Thomas area to the area east of the Grand River about the time of European contact, and of the variability in the artifact assemblages between clusters of Neutral villages. These areas of research are still central to current investigations.

P.M. Pringle, encouraged by Wintemberg, surveyed and documented existing collections in the Niagara Peninsula from about 1920-40. He provides notes on the excavations of such local collectors as Frank Butters, John Morton, William Cleland and Harris Finlay (Pringle 1933). Others at this time also kept detailed records of their activities at cemeteries such as Dwyer (R. Smith and Murphy 1939) and Walker (Steele 1944).

In the 1930's and 1940's there was an increasing academic interest in the Neutral. Wilfred and Elsie Jury established the Museum of Indian Archaeology at the University of Western Ontario and were active in the excavation of a number of Prehistoric Neutral sites in the London area (Jury 1937, 1941, 1946, 1948b). Phileo Nash from the University of Toronto conducted excavations at the Pound site (Emerson 1954; Kapches 1977), and beginning in 1949 Thomas Lee, from the National Museum of Canada, undertook survey west of the Grand River (T. Lee 1951a, 1952, 1959), which documented many Neutral period sites.

The 1950's and 1960's saw a fluorescence in Iroquoian research. MacNeish (1952a), Emerson (1954), and J. Wright (1966) incorporated Neutral data into broader Iroquoian developmental schemes. Marian White (1961, 1966, 1968, 1972), following Houghton's lead, focused on the identification and description of the Neutral in the Niagara Frontier area of New York and Ontario. The highly respected amateur archaeologist Frank Ridley, along with his own extensive contributions, summarized the work of numerous amateurs, including R. Smith, J. Steele, and E. Sackrider, in his 1961: *Archaeology of the Neutral Indians*, the first available synthesis of Neutral archaeology in Ontario.

During the late 1960's and throughout the 1970's, late 16th and early 17th century Neutral sites became a focus of attention at McMaster University, principally through the efforts of Wm. C. Noble. Noble's copious exploratory excavations on village sites ranging from the protohistoric Cleveland (1972c), the early historic Christianson (1970) and the later historic Walker (M. Wright 1981) and Hamilton (Lennox 1981) sites, produced some of our first detailed recording of Neutral longhouses and associated artifact assemblages. Too, survey, regional synthesis, and studies of the utility of glass trade beads for dating sites by Ian Kenyon (1969, 1972; I. Kenyon and Kenyon 1983), and David Stothers' investigation of the Shaver Hill cemetery (1972), broadened the growing picture of Neutral life.

During the late 1970's and 1980's, a substantial number of undergraduate and graduate thesis from universities across Canada and the United States, as well as independent research projects and salvage excavations, added exponentially to our knowledge of Neutral archaeology. These included individual site analyses from the 15th, 16th and 17th centuries (N. Wagner et al. 1973; D. Smith 1977; Busby 1979; M. Wright 1981; Lennox 1981, 1984a, 1984b, 1987a; W. R. Fitzgerald 1982a, 1984, 1990b; W. R. Fitzgerald and Saunders 1988; R. MacDonald 1986; Pearce 1984; I. Kenyon 1986; Keron 1981b, 1983, 1986; Jackes n.d.; Foster 1982a; S. Jamieson 1979; Ferris 1987b; Warrick 1979, 1980, 1983, 1984a), human osteological analyses (W. Kenyon 1982; P. Wright 1974; Saunders 1988, 1989), faunal and floral analyses (see subsistence section), settlement pattern and regional syntheses (Pearce 1983, 1984; Dodd 1984; Warrick 1984a; M. Cooper 1985; Horne 1987; W. R. Fitzgerald 1990a), and specific areas of material culture (Engelbrecht 1984; W.R. Fitzgerald 1982c, 1988, 1990a; Fox 1972, 1982g; S. Jamieson 1984; I. Kenyon and Kenyon 1983, 1987; Matthews 1981a; Noble 1979; D. Smith 1987).

Another area which flourished in the 1970's and 1980's, and continues to do so, are the contributions of numerous avocational archaeologists. Stimulated, first of all by their own interests in the discipline, and encouraged by the Ministry of Culture and Communications, by the various chapters of the Ontario Archaeological Society, and by the professional community, they continue survey, monitoring, excavation, reporting and publication of their results. The volumes of their reports from the past 20 years have been a tremendous contribution to Neutral archaeology specifically, and Ontario archaeology generally.

Chronological Framework and Terminology

Late Woodland sequences have often been divided into a "Prehistoric" prior to European influence, a "Protohistoric" (Noble 1968), in which European goods but not the Europeans themselves had entered the area, and an "Historic" period demarcated by the actual arrival of Europeans. However, these broad segments, particularly the latter two periods, lack chronological and cultural sensitivity. For example, the Neutral "Protohistoric" definitionally spans the period from the first European appearance along the Atlantic Seaboard in the early 16th century to 1615 when Etienne Brûlé is thought to have passed through Neutral territory. Since these periods are defined by the physical presence of Europeans in an area and their influence on various Native groups, these historic, chronological boundaries differ from region to region. Along the Atlantic coast, for instance, the "Historic" period began much earlier than in southern Ontario. So, while a Micmac site of A.D. 1580 is by definition considered to be "Historic" because of the presence of Europeans in the region, a contemporary Neutral site with an identical assemblage of European material culture is considered to be "Protohistoric." Therefore, we prefer to use a chronological terminology that has a wider applicability. This terminology is shown on Figure 13.2 and is discussed below.

Let us start with the beginning of the Neutral sequence. The 15th century Neutral, archaeologically, are clearly distinctive from historic, 16th and 17th century expressions of Neutral culture in terms of artifact styles, house construction, and subsistence pursuits. For the sake of convenience, the few earlier sites that have been investigated (e.g. Moyer [N. Wagner et al. 1973], Coleman [R. MacDonald 1986]; Ivan Elliot [W.R. Fitzgerald 1990b]) will be subsumed under the designation "Prehistoric Neutral." A lack of radiocarbon dating prevents the assignment of precise temporal boundaries, although Dodd et al. (this volume) have provided a convenient boundary with the Middle Ontario Iroquoian stage at A.D. 1400, and for now, a provisional terminal date of A.D. 1500 will be implemented for this period.

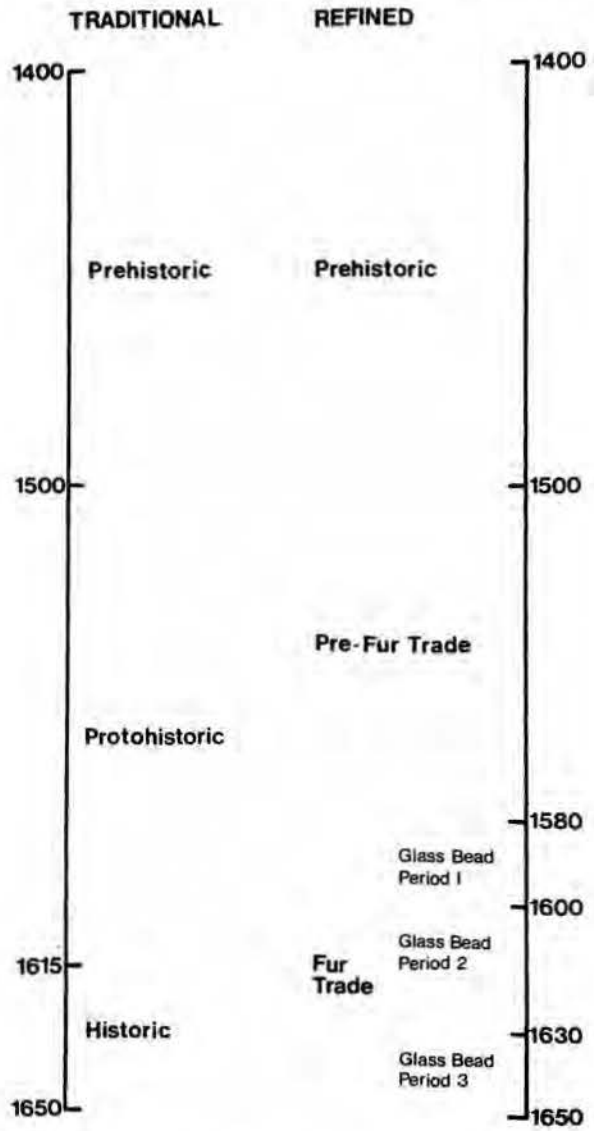

FIGURE 13.2: Chronological Frameworks for the Neutral.

Turning to the 16th century, prior to the onset of commercial fur trade activities in the Northeast at around A.D. 1580, European goods tend to be infrequent on Neutral sites. This era has been named the Pre-Fur Trade (PFT) period (W.R. Fitzgerald 1990a:544-556) and is coincident with the early portion of the Neutral "Protohistoric." The term "Pre-Fur Trade" can be used throughout the Northeast and will have associated with it a specific temporal range -- ca. A.D. 1500-1580. While European goods are not universally present on sites of this era, comparisons of Native material culture assemblages, and possibly the use of radiocarbon dating, permit the placement of sites within this period.

With the onset of the commercial fur trade (notably beaver pelts) after A.D. 1580, large amounts of dateable European goods came into circulation amongst Native groups in the Northeast. However, prior to the pioneering efforts of Ian Kenyon (1969), there was no means by which Neutral sites of the late 16th and early 17th centuries could be accurately dated. What I. Kenyon, and subsequently W.R. Fitzgerald, have been able to determine is that European trade goods which appear on Native sites from this period, in particular glass trade beads, are highly sensi-

tive chronological indicators. Based on glass bead types and frequencies from a large number of Native habitation and cemetery sites in the Northeast, as well as on historical documentation detailing the technological changes to glass bead manufacture in Europe during the period under study, Kenyon and Fitzgerald have been able to define fairly controlled calendric periods for the early Historic period (I. Kenyon and Kenyon 1983; I. Kenyon 1984; I. Kenyon and Fitzgerald 1986; W.R. Fitzgerald 1982b, 1983, 1990a). These are: Glass Bead Period 1 (GBP1), dated between A.D. 1580 and 1600; Glass Bead Period 2, dated between A.D. 1600 and 1624/1630; and Glass Bead Period 3, dated between A.D. 1624/1630 and 1650. I. Kenyon and Kenyon (1983) have also been able to sub-divide Glass Bead Period 3 into an earlier, 3A period, dating between ca. A.D. 1624/1630 and the later 1630's, and a subsequent 3B period, dating between the late 1630's and ca. A.D. 1650. With this chronology of glass trade beads defined, historic Neutral sites, and indeed sites from across northeastern North America that possess these distinctive bead assemblages, can now be assigned to quite accurate dates. The characteristic beads which define each of these periods will be described in the Material Culture section below.

Finally, as an end date for the Neutral sequence, between A.D. 1647 and 1651 the Neutral were attacked and eventually expelled by the Five Nations Iroquois from their homeland (G. Wright 1963:50-56). This provides an indisputable terminal date for the Neutral occupation of southern Ontario.

Prior to reviewing the archaeological data for this group, some understanding of the demographic and political character of the Neutral Iroquoians is in order, although we are largely confined in these areas to historical sources which only hint at this context. Thus, any suggestions provided here must largely remain conjecture.

Population Size

The population of the historic Neutral has been variously estimated from documentary sources to have ranged from 12,000 to 40,000 people distributed between 28 and 40 villages and smaller settlements (Biggar 1922-1936 [6]:249; Daillon 1866 [3]:802; Thwaites 1896-1901 [20]:103-105, [21]:191; G. Wright 1963:7-8; Noble 1978:156, 1984:17). The lower estimates may well reflect the devastating effects of European diseases and periods of famine which swept through the region between A.D. 1634 and 1640 (Thwaites 1896-1901 [20]:47, [21]:191-235; Trigger 1982).

Political Configuration

There has been continual refinement of our understanding of who the Neutral were, from the time of Champlain's initial and vague impressions through to the present. As noted earlier, historical accounts provide insights into the nature of the Huron and Iroquois confederacies, yet are lacking for the Neutral. Unlike the Huron and Iroquois situation, European chroniclers were infrequent visitors to the Neutral and this lack of familiarity would be accentuated when attempting to understand an aspect of society as complex as its political system. Also, to include such a large and diverse group as the Neutral under one name, which was simply intended to depict their military restraint in the Huron-Iroquois wars, was perhaps, by modern standards, the greatest misconception. It has erroneously led many to assume that the Neutral were one tribe -- a single, homogeneous group of people.

The Neutral have variously been referred to as a nation or a confederacy of tribes comparable to the Huron or the New York Iroquois. This model seems best to fit their geographical distribution into somewhat isolated site clusters and explain the differences between cultural remains found on sites within the various village groups. Specifically, in the area between the Huron and the Five Nations Iroquois confederacy, there are what appear to be as many as eight or nine late 16th-early 17th clusters of Neutral sites (Figure 13.1; Table 13.1). While all sites have likely not been located for each cluster, known village sequences in most of these clusters are relatively complete. Thus, they provide an indication of the number of possible Neutral communities or groups and their geographic distribution (W.R. Fitzgerald 1990a:257-259; Figure 13.3). It is also probable that these site clusters represent separate tribal units, as suggested when considering the same criteria that have been used to define the tribal entities of the Iroquois confederacy in New York; namely, the presence of territorial boundaries which equate with culturally defined boundaries (Fenton 1978:297; Niemczycki 1984:80). Each of the Neutral site clusters, and the sequence of

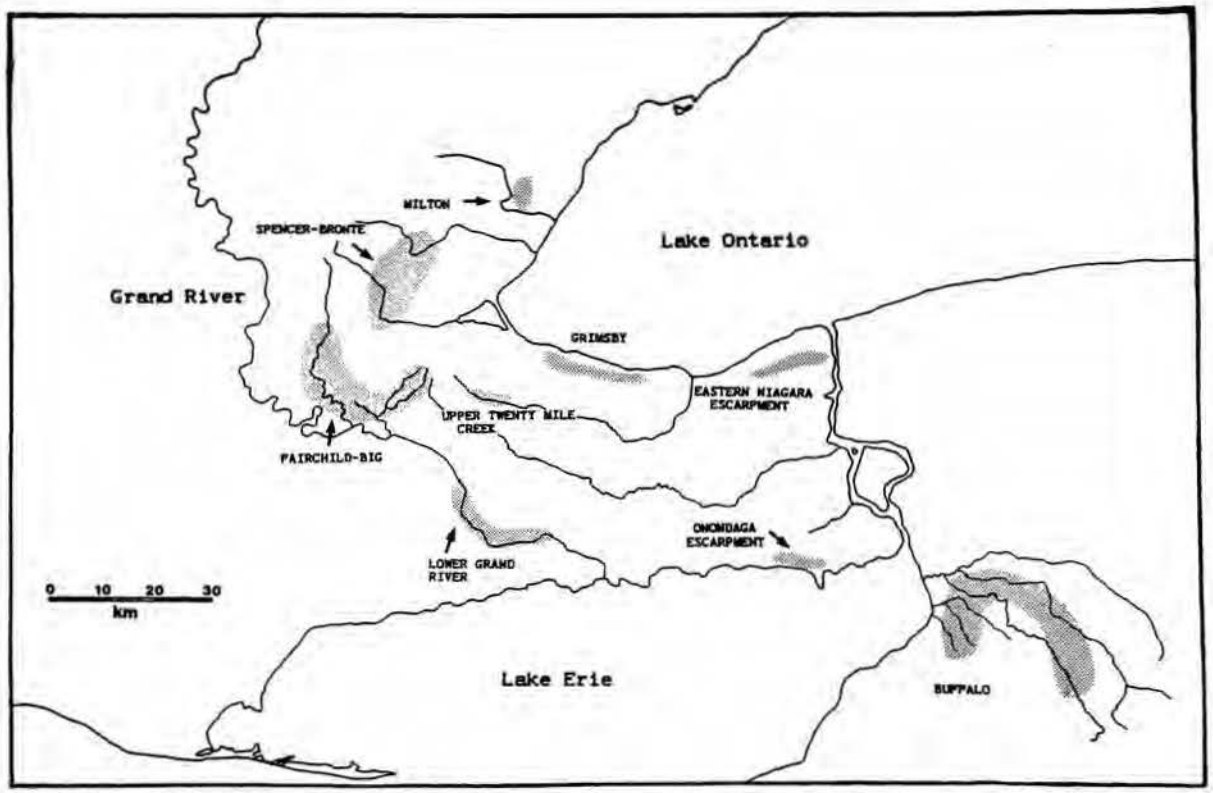

FIGURE 13.3: Late Sixteenth and Early Seventeenth Century Neutral Site (Tribal?) Clusters.

village occupations within each cluster, occur in a restricted area -- a physiographic region (e.g. a watershed or other topographic feature), which was likely culturally perceived as a tribal or common group territory. Distances between contemporaneous sites of adjacent clusters also suggest that each group understood these distinctions and that there was a distinct domain for each. This spatial and temporal pattern of settlement is also evident for the New York Iroquoian tribal units such as the Seneca and Mohawk.

Most recently, there has also been the suggestion that the Historic Neutral reached the socio-political level of a chiefdom, united under the authority of a supreme chief (S. Jamieson 1981; Noble 1978, 1984, 1985), rather than being simply a loose confederation of tribes comparable to the Huron. While this is certainly an interesting concept, it is based primarily on limited historic documentation and, as Noble (1984:22) suggests, has few testable implications in the archaeological record.

Material Culture

Studies of Neutral material culture have tended to be descriptive and classificatory, often site specific, in an attempt to provide detailed accounts of materials recovered during excavation. Some studies have summarized particular artifact types and their range of variability across space and through time as an aid to dating, sourcing particular materials or artifact forms, or to address special interpretive problems. These have been insightful and have helped provide, on the one hand, some uniformity, and on the other hand, a point of departure for other researchers. Recently, more attention has been directed towards documenting artifact type variability within and between site clusters with hopes of tracing village movements and elucidating the nature of intercommunity relations; however, at this point in time, a description of "Neutral" material culture must largely be restricted to one that characterizes aspects that appear to be shared among the many particular territorial groups of Neutral over broad periods of time.

TABLE 13.1: Prehistoric and Historic Neutral Sites and Site Clusters.

MAP #[1]	SITE NAMES	AGE[2]	SITE[3]	REFERENCES
1	Wolfe Creek	16th Century	V	Foster 1982a, 1990
	McGeachy	16th Century	V	T. Lee 1952, J. Wright 1969b
	Savage	15th Century	C	Murphy 1988b
2	Clearville	15th Century	V	Jury 1941
3	Southwold	15th Century	V	Wintemberg 1935, D. Smith 1977
4	Lawson	15th Century	V	Wintemberg 1939, Pearce 1984
(London	Windermere	15th Century	AC	Pearce 1983
Cluster)	Ronto	15th Century	AC	Pearce 1983
	Smallman	15th Century	AC	Pearce 1983
	Black Kat	15th Century	AC	Arnold and Pearce n.d.
	Mathews	15th Century	AC	Arnold and Pearce n.d.
5	Pincombe 1	15th Century	V	Pearce and Catsburg 1985
(Dingman	Pincombe 2,5,6	15th Century	AC	Pearce and Catsburg 1985
Creek	Pond Mills	15th Century	AC	Poulton 1985a
Cluster)	and others	15th Century	AC	Keron 1986, 1989
6	Harrietsville	15th Century	V	Keron 1983
7	Pound	15th Century	V	Kapches 1977
(Catfish	and others			Poulton 1980, Connoy 1979,
Creek				McWilliams 1977, 1978
Cluster)				
8	Moyer	15th Century	V	N. Wagner et al. 1973
(Kitchener	Reidel	15th Century	V	Horne 1987
Cluster)	William Barrie	15th Century	V	G. MacDonald 1961
	Mannheim	15th Century	V	G. MacDonald 1961
	Coleman	15th Century	V	R. MacDonald 1986
	Baden Wagler	15th Century	V	Horne 1987
	Dry Lake	15th Century	V	Horne 1987
	Waterloo	16th Century	V	Horne 1987
9	Ivan Elliot	16th Century	V	W.R. Fitzgerald 1990a, 1990b
	Raymond Reid	16th Century	H	W.R. Fitzgerald 1984, 1990b
10	McClellahan	GBP 1	Ce	C. Reid and Conway 1976
(Milton	Carton	GBP 1	V,Ce	
Cluster)	Milton Heights	17th Century	Ce	Ferris 1987b
	Brown	GBP 2	?	W.R. Fitzgerald 1990a
	Milton	?	V	
	McCarthy	GBP 3	Ce	C. Reid and Conway 1976

Table 13.1: continued.

MAP #[1]	SITE NAMES	AGE[2]	SITE[3]	REFERENCES
11	Pipeline	15th Century	V	Busby 1979
(Spencer-	Crawford Lake	15th-16th Century	V's	D. Smith 1977, Finlayson et al. 1989
Bronte	Buddy Boers	16th Century	V	M.P.A. 1989a, 1989b
Creeks	Zap	16th Century	V	M.P.A. 1989a, 1989b
Cluster)	Carlisle	GBP 1	H	I. Kenyon 1986
	Christianson	GBP 2	V	W.R. Fitzgerald 1982b
	Shaver Hill	GBP 2	Ce	Stothers 1972
	Mount	GBP 2	V	Boyle 1888
	Mills	GBP 3	V	I. Kenyon 1972
	Robertson	GBP 3	V	Ridley 1961
	Dwyer	GBP 3	Ce	Ridley 1961
	Hamilton	GBP 3	V	Lennox 1981
	Hood	GBP 3	V	Lennox 1984a
	Bogle I	GBP 3	H	Lennox 1984b
	Bogle II	GBP 3	H	Lennox 1984b
	Freelton	GBP 3	V	J. MacDonald 1988
12	Knight-Tucker	16th Century	V	I. Kenyon 1972
(Fairchild-	Main	16th Century	V,Ce	Ridley 1961
Big Creeks	Henderson	16th Century	V	
Cluster)	Mannen	PFT	V	Mannen 1974
	Cleveland	PFT	V	Noble 1972c
	Fonger	PFT	V	Warrick 1984a
	Misner	GBP 2	V,Ce	Fox 1985d, I. Kenyon 1985
	Stratford	GBP 2	V	Waugh 1903
	Smith-Hailey	GBP 2	V	Hamalainen 1977
	Smith-Saeger	GBP 2	Ce	Lennox and Murphy 1989
	Alder	17th Century	C	Hagerty and Lennox 1990
	Hailey's Pond	GBP 2	Ca	Dodd 1990
	Sealey	GBP 3	V,Ce	I. Kenyon and Kenyon 1983, Waugh 1903
	Bundy-Bodwell	17th Century	H	I. Kenyon 1972
	Lud-Vanderlip	17th Century	H	I. Kenyon 1972
	Westbrook	17th Century	H	Waugh 1903
	Walker	GBP 3	V,Ce	M. Wright 1981
	Snider	GBP 1	V,Ce	J. Smith 1897
	Muskrat Pond	16th Century	H	
	Bradt I	16th Century	V	
	Bradt II	16th Century	V	
	Shaver	GBP 1	Ce	
	Daniels	GBP 2	V	Pringle 1933
	C. Smith	GBP 2	H	Ridley 1961
	Donovan	GBP 2	H	Ridley 1961
	Burk/Lindley	GBP 3	V,Ce	Ridley 1961
	David Butter	?	H	I. Kenyon 1972
	MacPherson	16th Century	V,Ce	W.R. Fitzgerald and Saunders 1988
	Cooper	GBP 3	Ce	Warrick 1982, 1983

Table 13.1: continued.

MAP #[1]	SITE NAMES	AGE[2]	SITE[3]	REFERENCES
13	Weylie	16th Century	V	I. Kenyon 1972
(Upper	Davidson	16th Century	V	I. Kenyon 1972
Twenty	Guyatt	16th Century	V	W. Bell 1963
Mile	Mitchell	16th Century	V	I. Kenyon 1972
Creek	Hoskin	PFT	V,Ce	I. Kenyon 1972
Cluster)	McMurray	GBP 2	V	
	Ronald	GBP 3	H	
	Martin	GBP 3	V	
	Wood	17th Century	V,Ce	I. Kenyon 1969
14	Grimsby	GBP 2 & 3	Ce	W. Kenyon 1982
15	Parsons	16th Century	C	
(Lower	McSorley	GBP 1	V,Ce	
Grand R.)	Fradenburg	GBP 2	V,Ce	I. Kenyon 1969
16	Stanley	16th Century	V	M. White 1969, 1972
(Eastern	Thorold	GBP 3	V	Noble 1980, 1984
Niagara)	St. Davids	GBP 3	Ce	I. Kenyon 1969
	Steele	17th Century	V	
17	Sherk-sahs	GBP 2	V	M. Cooper 1985
(Onondaga	McIntosh	GBP 3	V	M. Cooper 1985
Escarp-	Ruiter	GBP 3	V	Pengelly and Pengelly 1986
ment)	Point Abino	GBP 3	Ce	M. Cooper 1985
	Port Colborne	GBP 3	Ce	M. Cooper 1985
	Orchid	17th Century	Ce	M. White 1966, Granger 1976
18	Buffam	16th Century	V	M. White 1961
(Niagara	Eaton	16th Century	V	M. White 1961
Frontier-	Goodyear	16th Century	V	M. White 1961
Buffalo)	Green Lake	GBP 1	V,Ce	M. White 1961
	Kleis	GBP 3	V,Ce	M. White 1961
19	Kienkua	16th & 17th Century	V	M. White 1976
(Niagara	Orange Fort	16th Century	Ce	M. White 1976
Frontier-	Fort Peace	16th Century	V	M. White 1976
Huron	Shelby	16th Century	V	M. White 1961, 1976,
Plain)				1977

1: refers to number on Figure 13.1.

2: GBP= Glass Bead Period, PFT= Pre-Fur Trade.

3: V= village, Ca: camp, Ce= cemetery, H= hamlet, C= cabin, AC= agricultural cabin.

Ceramic Vessels

Ceramics are second in frequency on Neutral sites only to the remains of the stone industry. Because their remnants are so common and vessel form and decoration are such sensitive spatial and temporal indicators, pottery vessels receive the most attention in the archaeological literature. Named ceramic rimsherd types in common usage were formulated by MacNeish (1952a) and Ridley (1961) and are still invaluable when using a broad brush account of material culture. However, most researchers will also present descriptions of ceramic attributes to aid in the formulation of detailed local site sequences or for specific problems of interpretation.

Ceramic vessels vary considerably in size, reflecting the demands of individual eating utensils (about one litre), cooking vessels - perhaps for the family (5-10 litres), and storage vessels which can be considerably larger. Through time, however, there appears to be a general decrease in average vessel size (Figure 13.4).

Following the slightly elongate-globular body form of the Middle Ontario Iroquoian Stage (see Dodd et al: this volume), vessels of the Neutral sequence are typically more globular or squat-globular in form, with gently rounded shoulders, constricted necks and flaring collarless or collared rims. A variety of other vessel shapes exist, particularly during the historic period; however, they are infrequent. They include small flat bottomed vessels with nearly vertical walls decorated with triangular plat motifs (Figure 13.4-9), short, open bowls, and even less frequently, double mouthed vessels (Figure 13.4-7; Ridley 1961; W. Kenyon 1982).

Collars, where present, become more pronounced following the Middleport Substage, but collars generally remain short in height. Neck decoration on such rims are typed as Ontario Horizontal and Pound Necked (MacNeish 1952a; see also Dodd et al: this volume, for a fuller explanation of Iroquoian ceramic types). Ontario Horizontal and Pound Necked tend to be characteristic of the early prehistoric Neutral sequence. Also at this time, a small number of rims resembling Lalonde high-collared forms, but possessing shorter collars and less carefully executed decoration, can be found in site collections (I. Kenyon 1972; Figure 13.4-1,2)

By about A.D. 1500 neck decoration becomes rare. Dominating collections of this later period are short collared vessels decorated with simple oblique and/or opposed oblique, trailed or stamped motifs (i.e. Lawson Incised and Lawson Opposed; Figures 13.5 & 13.6). Less common in site assemblages are undecorated vessels, either collarless or exhibiting incipient (e.g. poorly defined) collars. These vessels generally have outflaring rim profiles, plain exteriors and interiors, and decoration, when it occurs, appears only on the outflaring lip edge of the vessel (i.e. Ridley Plain; Figure 13.4-12). While minor vessel types continue to occur, these simple incised or plain vessel types dominate Neutral site assemblages through to the end of the historic period.

Castellations, a vertical and sometimes horizontal projection of the rim, are certainly decorative and may be a highly embellished focus of the vessels decorative motif, but also likely aided in pouring out the vessel's contents. Castellations may appear singly or in multiples and range from simple rounded and low pointed forms during the early prehistoric period, to more pointed and protruding in later times. These castellations are sometimes appliqued (i.e. applied to the vessel rim as a separate piece of clay), may occur in association with strap handles, and rarely, are shaped into the form of animals.

Vessel shoulders tend to be gently rounded, and are occasionally decorated with a single band of punctates, and even more infrequently with opposed oblique or horizontal trailed lines. Shoulder decoration is most prevalent in Neutral site assemblages during the 16th century.

The bodies of Neutral vessels throughout the sequence are, as a rule, plain and undecorated. Textured bodies (cord-roughened and ribbed-paddled) are minor occurrences on most sites. In some instances, exfoliated bodysherds reveal a cord-roughened surface that has been covered and smoothed with the addition of a thin layer of clay to the vessel exterior or the attachment of a separate major vessel segment in manufacture, such as the rim area to the body of the pot.

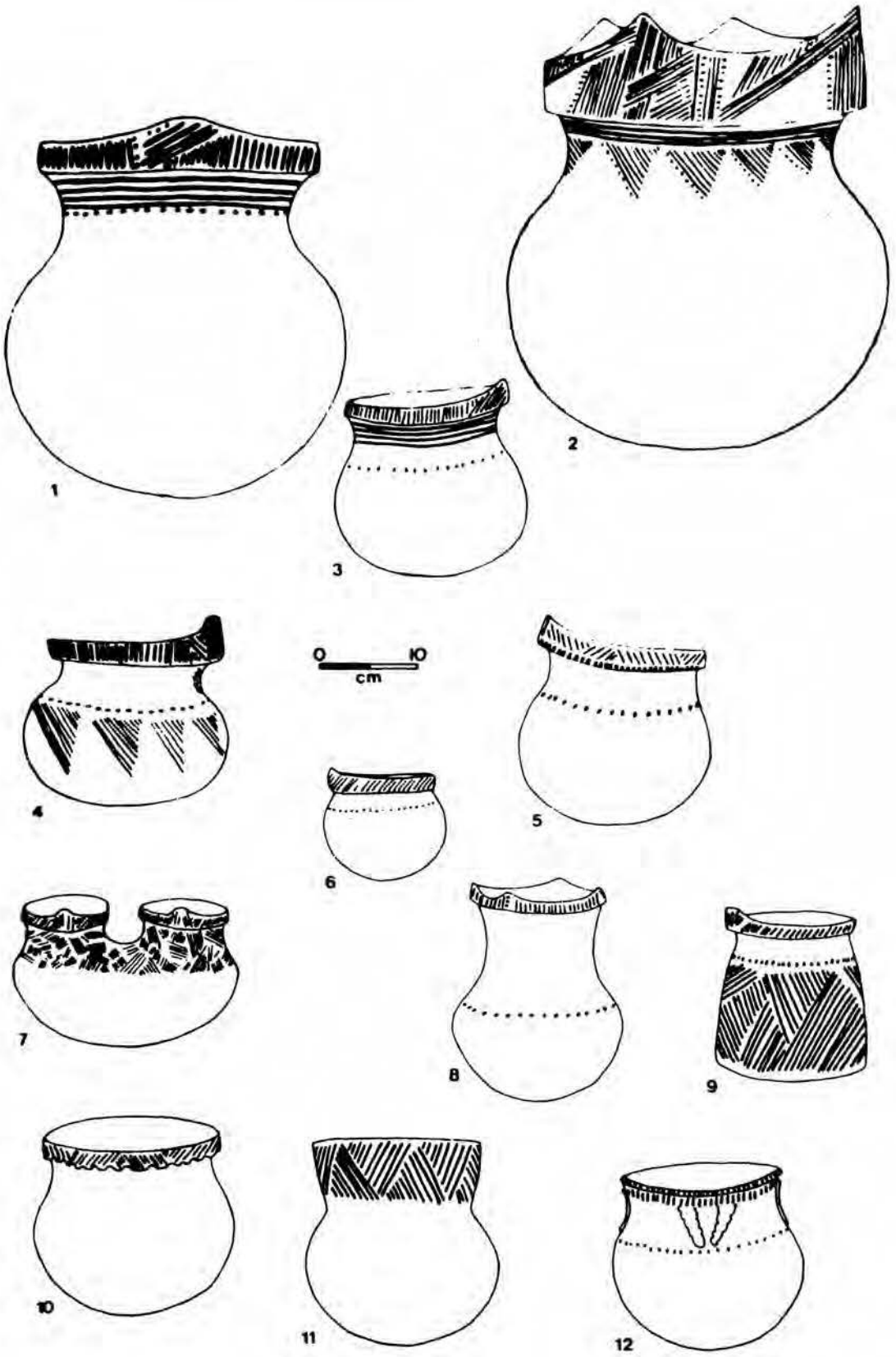
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FIGURE 13.4: Ceramic Vessel Forms. 1-3: 15th Century; 4-5: 16th Century; 6: 16th-17th Century; 7: Double Mouthed Vessel (17th Century); 8: Vessel with Elongated Neck (17th Century); 9: Flat-Bottomed Pot (17th Century); 10: Genoa Frilled Vessel (17th Century); 11: High-Collared, Shell-Tempered Vessel (17th Century); 12: Collarless, Shell-Tempered Vessel with Applique Strips on the Neck (17th Century).

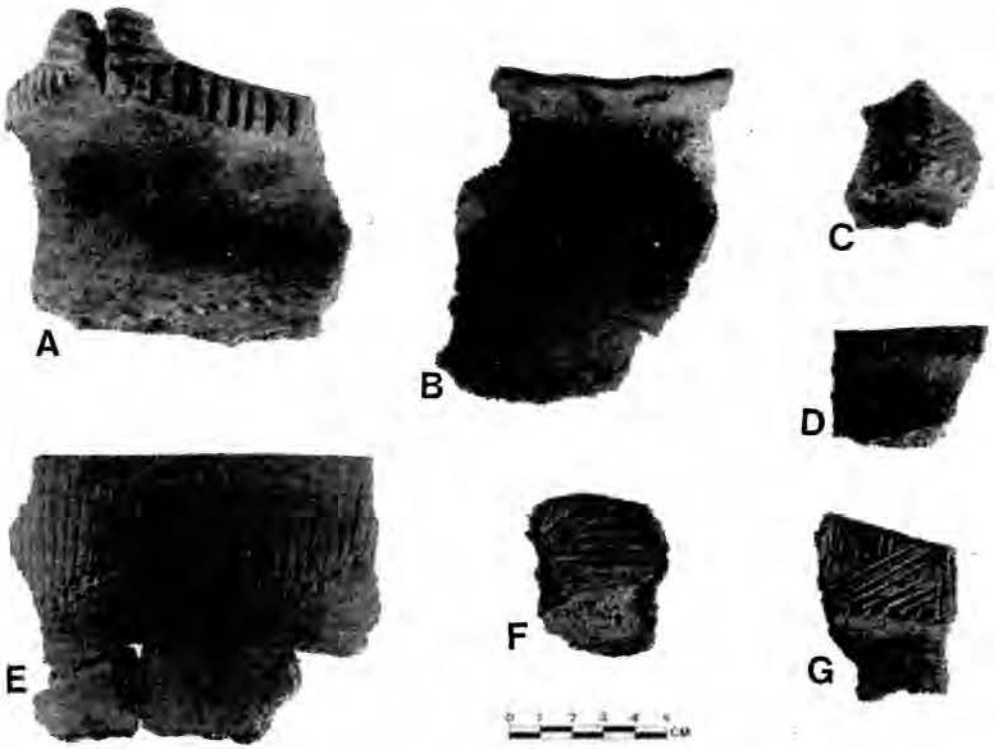

FIGURE 13.5: Grit-Tempered Rim Sherd Examples from the Mid-16th Century MacPherson Village.

External influences from neighboring ceramic traditions occur throughout the Neutral sequence but appear most common along the frontiers and during the historic period. For instance, ceramic types more frequent on Five Nations Iroquois sites in New York state such as Genoa Frilled (MacNeish 1952a; Figure 13.4-10), occasionally appear on Neutral sites of the Niagara Peninsula, suggesting some form of contact between these groups.

A non-Iroquoian, shell-tempered[1] ceramic assemblage, more common on sites to the west in Michigan and Ohio, is present on some Neutral sites. There is a strong association between shell-tempering and certain ceramic vessel attributes, such as collarless rims, cord-roughened surface treatment, appliqued strips on vessel necks, dentate stamped and corded motifs on rim exteriors, and triangular plat motifs on high-collared rims (W.R. Fitzgerald 1982b; Lennox 1977, 1981, 1984a; Figure 13.4-11,12; 13.7).

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1 Temper includes larger particles mixed in with the clay during ceramic manufacture which prevents cracking of the vessel during firing. It usually consists of crushed granitic or limestone rock particles rather than the shell as described here.

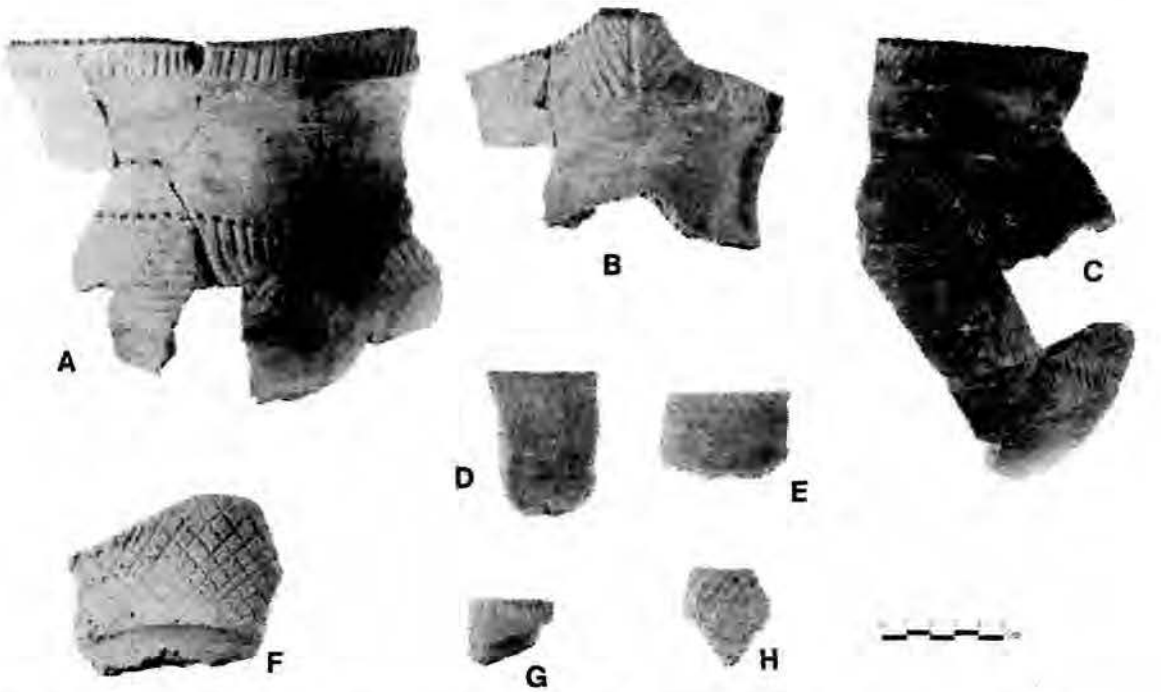


FIGURE 13.6: Grit-Tempered Rim Sherd Examples from the 17th Century. A-D, F: Freelton Site; E, G, H: Christianson Site.

The presence of shell-tempering within Neutral ceramic assemblages exhibits a distinctive temporal and spatial distribution. For instance, the 15th century Pound site (Stimmel 1978:4) and the A.D. 1500 heavily fortified Lawson site (Wintemberg 1939:23; Pearce 1984), both in the London-St. Thomas area, possess only traces of shell-tempered ceramics. However, these and other sites in the vicinity (i.e. Keron 1981b, 1983) also possess small frequencies of the Parker Festooned pottery type (Figure 13.7a; see Murphy and Ferris: this volume). Both shell-tempering and Parker Festooned pottery are considered to be more westerly influences, specifically originating from the Algonquian Western Basin peoples of the Toledo-Detroit-Chatham region. Later, early to mid-16th century western Neutral sites such as McGeachy and Wolfe Creek near present-day Chatham (Ferris et al. 1990; Foster 1982a, 1990; T. Lee 1952; J. Wright 1966), are characterized by a predominantly Neutral ceramic assemblage, but now yield a higher percentage of Western Basin ceramic types. For instance, at the Wolfe Creek site, 17% of bodysherds were shell-tempered. On contemporaneous Neutral sites further to the east, however, shell-tempered ceramics are rare to absent.

During the 17th century, the presence of shell-tempering, based on bodysherd frequency, increases dramatically on sites located along the Spencer-Bronte Creeks drainage north of present day Hamilton -- rising from 14% on the A.D. 1600-1630 Christianson village to 64% on the A.D. 1630-1650 Hamilton village (W.R. Fitzgerald 1982b; Lennox 1981). By way of contrast, nearby sites within the Fairchild-Big Creeks drainage, such as the A.D. 1630-1650 Walker village, possess only 4% shell-tempered pottery (M. Wright 1981). This post-A.D. 1600 increase in shell-tempered ceramics on Spencer-Bronte sites is attributed to an increase in hostilities between this particular Neutral group and the historic Algonquian Fire Nation occupying the extreme western end of Lake Erie (Lennox 1981). Between A.D. 1638 and 1641 the Neutral brought more than 1000 Fire Nation captives, primarily women and children, back to Neutral territory (Thwaites 1886-1902 21[2]:195; Heidenreich: this volume), and it appears that the majority of hostages were restricted to only a few sites. Overall, it is likely that the inhabitants of western

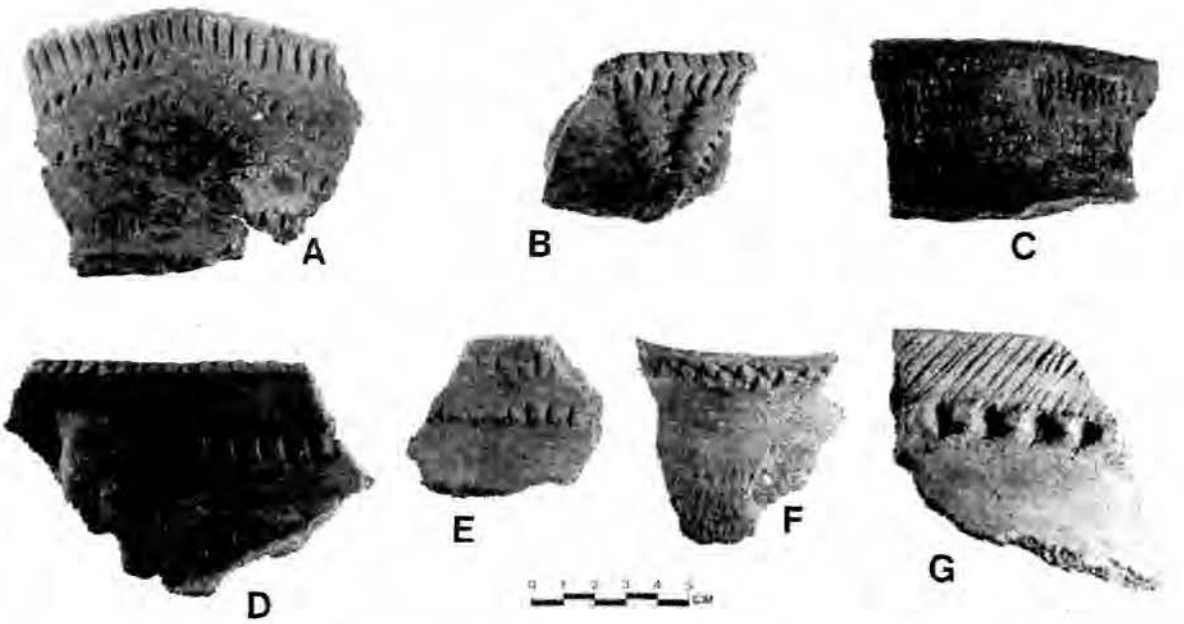


FIGURE 13.7: Foreign Rim Sherd Examples from the Seventeenth Century. A-F: Shell-Tempered; G: Grit-Tempered. A-B, E-F: Christianson Site; C, D, G: Freelton Site.

sites such as Lawson and Pound initiated or were continuing hostilities with a group farther to the west, and that this conflict intensified with the subsequent occupation of Wolfe Creek and other Iroquoian sites (such as Savage, Clearville and McGeachy), as the Neutral expanded westwards. The people at the most westerly sites likely joined in the late prehistoric migration into Historic Neutralia to become the inhabitants of the Spencer-Bronte Creeks site cluster, but continued their western forays during the historic period. The ca. A.D. 1600-1630 Indian Hills site in Toledo, Ohio (Graves 1984) possesses a shell-tempered ceramic assemblage that is indistinguishable from that observed on contemporary Spencer-Bronte Creeks sites and has been identified as a Fire Nation village (Stothers 1981).

Ceramic Pipes

Ontario Iroquoian pipes, "are objects of high craftsmanship and aesthetic appeal....the finest product of the Iroquois ceramic art" (Emerson 1954:45), and their classification still follows that established by Emerson over thirty-five years ago. That typology was based on a combination of bowl form (i.e. conical, barrel, vasiform, trumpet, collared) and motif (plain, ringed-with horizontal lines, and decorated-with opposed obliques) resulting in named pipe groups which reflected those attributes (i.e. plain trumpet, ring barrel). As Emerson noted, pipe types are sensitive both spatially and chronologically. More recently, however, as with ceramic vessels, researchers have found it more useful to describe their assemblages by attributes of bowl form and decorative motif rather than by type in order to allow others to redefine broader groupings.

Following the Middleport Substage, conical and barrel shaped pipe bowls continue into the 15th century (Figure 13.8). Most notable is the increase in the popularity of flaring pipe bowl forms, particularly exemplified by the trumpet and vasiform varieties. These are replaced in the early 16th century with short, barrel-shaped (Iroquois ring, apple or acorn) bowls and collared and coronet varieties which persist into the 17th century (Figure 13.9).

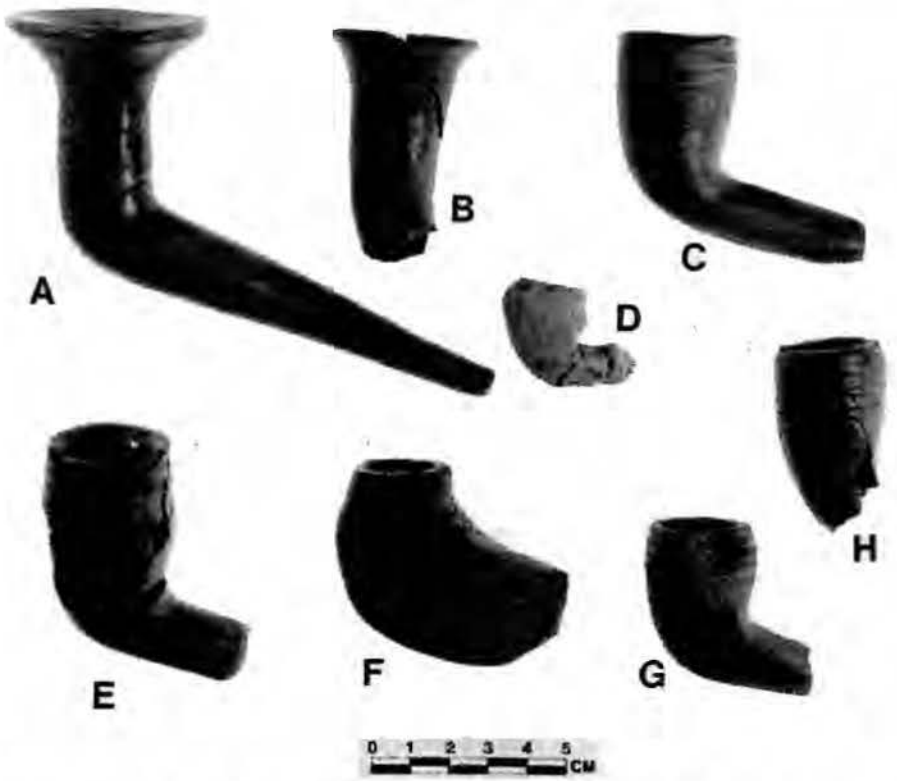


FIGURE 13.8: Ceramic Pipes from the Ivan Elliot Village. A: Trumpet; B: Flared; C, E, H: Iroquois Ring; D: Juvenile; F: Rattle Pipe with Stylized Bird Motif; G: Apple Bowl Ring.

Effigy pipes depicting both animal and human forms (Noble 1979; Matthews 1981a) are present throughout the 15th, 16th, and 17th centuries, increasing in popularity through time, most substantially following the introduction of epidemics by Europeans in the 1630's (Figure 13.9g; 13.10). In rare instances, beads of glass or shell have been inserted as eyes (Figure 13.10a), and notable are the pinch-faced human effigies that likely represent shamanistic curing activities (see below and Figure 13.9d,e). Even in their fine detail, pinch-face effigy pipes can show great similarity from site to site and between Neutral and Huron assemblages. One specimen from the Misner cemetery (Figure 13.9e), possesses a "rattle head" (Kapches 1980b).

Chipped Lithics

One of the most outstanding characteristics of Neutral material culture, compared to such groups as the Huron, is the preponderance of chipped stone tools and by-products of their manufacture. This is likely the result of the proximity of Neutral territory to major chert sources -- Onondaga chert from the northeast shore of Lake Erie, Ancaster chert from the Niagara Escarpment at the western end of Lake Ontario, and Kettle Point chert from the southeast shore of Lake Huron. In addition to these primary chert sources, chert is also available from secondary sources, such as beach and glacial till deposits. Where primary sources were distant or difficult to access, the use of these secondary pebble cherts is more common.

Within Neutral chipped lithic assemblages, the high quality Onondaga chert clearly predominates, generally comprising at least 80% of the assemblages (e.g. Lennox 1981, 1984a, 1984b; M. Wright 1981; W.R. Fitzgerald 1982b). Ancaster chert is also available within Neutralia but tends to be poorly represented on most sites except those in close proximity to the source (Fox 1972:3). It is considered by modern knappers to be of inferior quality and through experimentation it proves to be softer in abrasive situations (i.e. scrapers, cutting tools). Kettle Point chert

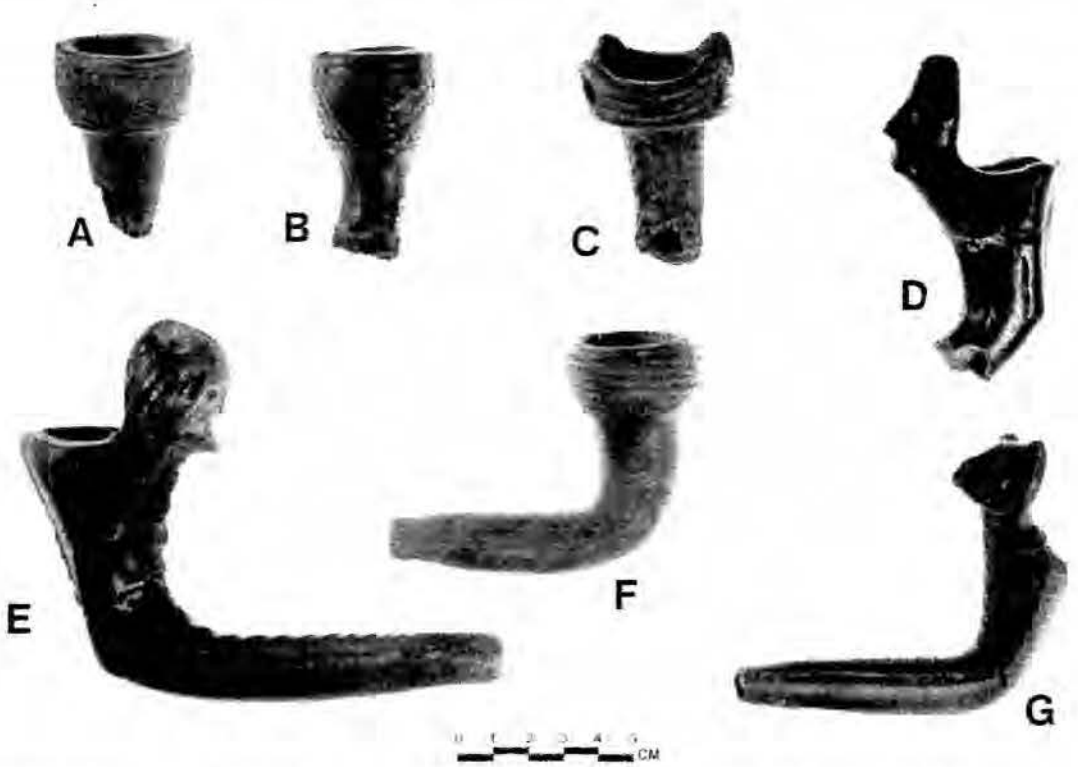
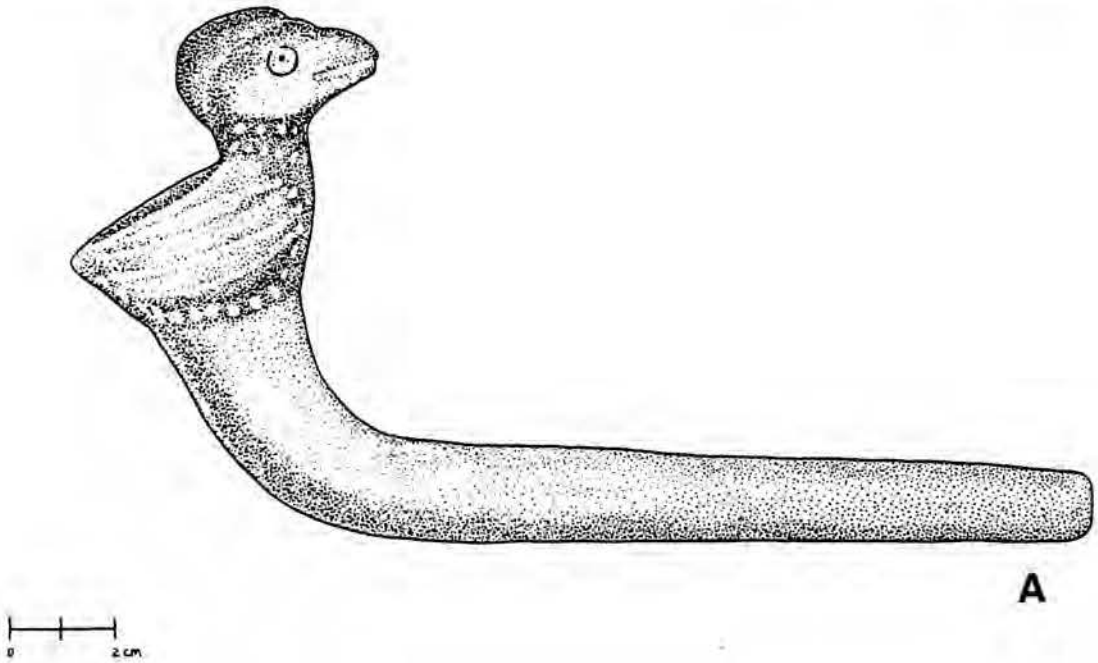


FIGURE 13.9: Ceramic Pipes from Seventeenth Century Sites. A-B: Collared and Decorated; C: Coronet; D-E: Pinched Face (E has a "rattle" head); F: Bulbous Ring; G: Owl Effigy.

is regarded as a high quality material, however, the distance to the source (approximately 100 km west of the Grand River) appears to have restricted its use on sites east of the Grand River to less than 10% of the chipped lithic assemblage. Kettle Point chert tended to be more widely used in prehistoric times at sites in the London-Chatham area (Janusas 1984; Pearce 1984), yet on other western Neutral sites such as Southwold and Wolfe Creek, the infrequent use of Kettle Point chert (Foster 1982a, 1990; Janusas 1984) suggests that there was difficulty in accessing the source. Amongst the historic Neutral, sites of the Spencer-Bronte Creeks drainage are further than most sites from the Onondaga chert outcrops and their use of Kettle Point chert is more common, perhaps tied to their military exploits to the west. On Neutral sites there may be a preference for Kettle Point chert in the manufacture of scrapers, perhaps reflecting the material's hardness.

Flake tools of many forms occur on Neutral sites, such as utilized flakes, retouched flake scrapers, spokeshaves etc., but most prolific are the unifacial snubnose endscrapers reflecting the importance of hide-working among the Neutral. Serrated endscrapers and serrated flakes suggested for use in the production of siltstone beads, for cutting shell, processing vegetable matter (Fox 1972), and in hide-working (Lennox 1978), appear most often on early historic sites, as do serrated points. Serrated scrapers, flakes and points appear to make their early introduction into Neutral assemblages from the west (Foster 1982a, 1990; Fox 1980d, 1982g).

Provisional suggestions of temporal and spatial variation in chipped lithic implement form have been presented, especially for projectile points. Middle Ontario Iroquoian projectile points are often side-notched (Dodd et al: this volume). Fifteenth century Neutral points are typically long and narrow, and are frequently side-notched, but by the contact era points have become smaller, side-notches generally disappear, and serration of the lateral edges becomes an occasional attribute, decreasing again by the mid-17th century (Fox 1972; Figure 13.11). Within any historic assemblage there is considerable morphological variation among points (W.R. Fitzgerald 1982b), but gener-



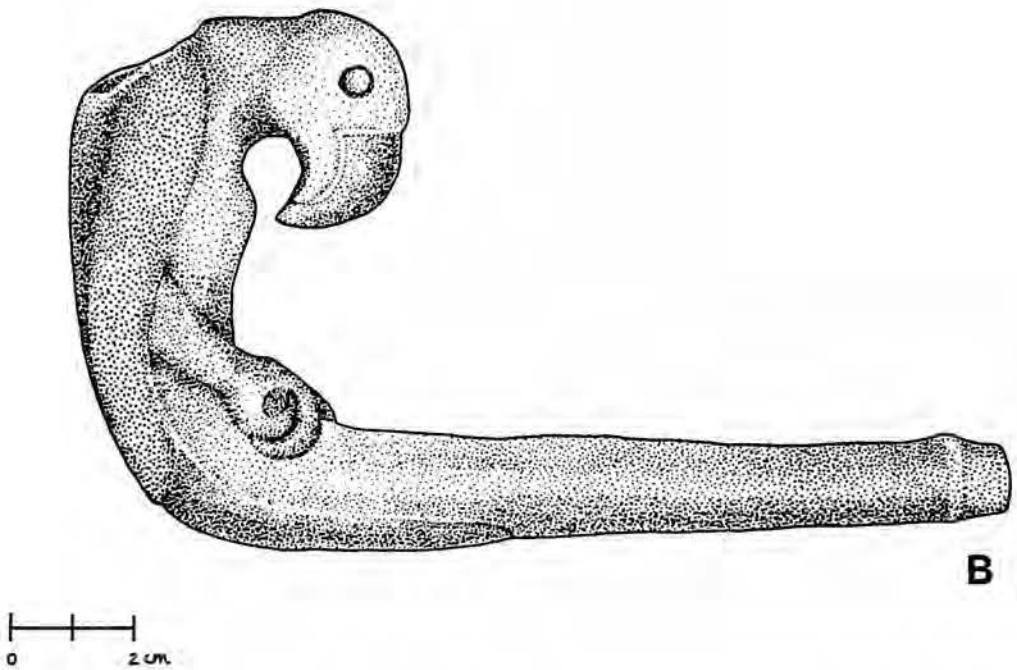


FIGURE 13.10: Pipes from the Grimsby Site. A: Loon Pipe (The punctates on the body and neck are filled with crushed shell while blue glass beads have been inset into the eyes); B: Parrot Pipe. Drawings courtesy of the Royal Ontario Museum, Toronto, from W. Kenyon (1982).

ally they are isosceles in shape with straight to concave basal edges and straight to slightly convex lateral edges. There is a tendency for these points to become smaller throughout the contact era. These trends in point form change through the Neutral sequence are adequately described by the point types Middleport Triangular and Middleport Notched, Nanticoke Triangular and Nanticoke Notched of the prehistoric Neutral sequence, and Daniels Triangular and Hamilton Serrated of the Historic Period (Fox 1980e, 1981c, 1981d, 1981e).

Other chipped tool forms found on Neutral sites include the foliate biface (Fox 1981b), present but rare throughout the sequence, and drills made from flakes or from points.

Ground Stone

A wide range of celts, adzes and chisels ground from metamorphic rocks are frequent recoveries from habitation sites up until the latter decades of the 16th century. With the appearance of European iron axes and celts around A.D. 1580, this aspect of the ground stone industry was rapidly supplanted by European equivalents.

Igneous rock, as well as limestone and other soft rock varieties (steatite and chlorites) served as raw material for the manufacture of smoking pipes (Figure 13.12). The harder materials tended to be ground into simple bowls to which would be attached a wooden stem, while softer stone could be fabricated into ornately decorated pipes often bearing effigies of animals or humans. It would appear from the number of stone pipes, preform rejects, and pieces of manufacturing debris present on some 17th century Petun sites (Charles Garrad 1989: personal communication) that this Iroquoian group may have been the producers of certain of the Neutral specimens. As was the case with ceramic effigy pipes, there was a florescence in this industry after A.D. 1630.

Also notable of the ground stone assemblage are manos and metates, pitted anvilstones or nutting stones, and sandstone shaft abraders. Other fine-grained, flat stone abraders exhibiting long parallel striations may have been used to sharpen tools such as awls or to abrade striking platforms during flint knapping. The drilled, slate pebble pendants popular during the Middleport substage are infrequent during the Neutral period.

Worked Bone, Antler and Teeth (Figures 13.13 & 13.14)

The diversity of the Neutral worked faunal assemblage is summarized by Prevec and Noble (1983). The extent to which it permeated all aspects of Neutral, and indeed other Iroquoian groups', material culture is indicated by the regular appearance of ornamental (beads, pendants, combs), ritualistic (rattles, sucking tubes, flutes), and a variety of utilitarian (awls, needles, projectile points, harpoons, shaft straighteners, and drifts) items in site assemblages.

With the introduction of European goods and disease, a few instances of alterations in this assemblage amongst the Neutral are evident. Worked proximal deer phalanges (toe bones), in particular those drilled through the distal joint, are present in Iroquoian assemblages of the Middle Ontario Iroquoian period in large quantities. However, there is a dramatic decline and almost complete disappearance of this artifact with the advent of the fur trade. Traditionally referred to as "cup-and-pin games" (see McCullough 1978), it may be that these drilled deer toes were the functional equivalent of the brass and copper "tinkling cone" so commonly encountered on Iroquoian sites when copper alloys became readily available after A.D. 1580.

Bone tubes (generally greater than 100 mm in length and frequently ornately decorated) are commonly referred to by archaeologists as "sucking tubes," used in shamanistic curing activities (M. Wright 1981:94; Lennox 1981:306; Warrick 1983:47; Figure 13.13b,c). Shamans were religious specialists, believed to have special curative and other spiritualistic or mystic powers, and in several historically documented New World cultures these shamans used bone tubes to "suck" diseases from the afflicted (W.R. Fitzgerald 1990a:241-248). Within historic Iroquoian cultures, these tubes are restricted to the Neutral. Also, within the Neutral sequence, these tubes are a sensitive temporal indicator, being recovered from sites belonging to the A.D. 1630-1650 era. It may be that these tubes represent an implement developed as an attempt to combat the psychological and physical trauma initiated by the post-A.D. 1634 epidemics. A final observation worth mentioning is that it is also about this time that "pinched-face"

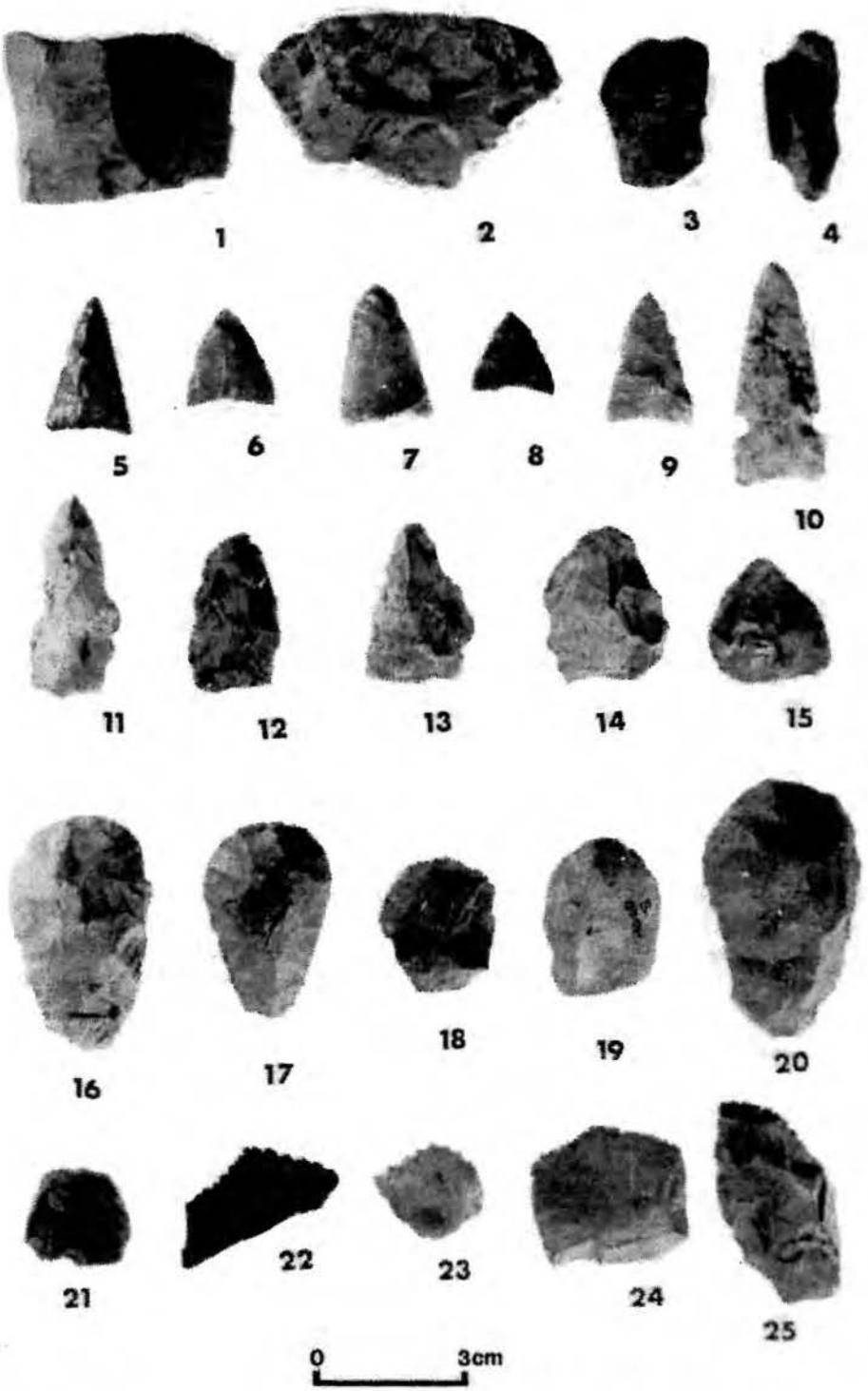


FIGURE 13.11: Chipped Lithics from the A.D. 1630 to 1650 Hood Village. 1-2: Random or Rotated Cores; 3-4: Bipolar Cores; 5-10: Projectile Points; 11-15: Point Preforms; 16-20: Snubnose End Scrapers; 21: European Gunflint; 22-25: Serrated Flakes.

FIGURE 13.12: Stone Pipes. A: Bear Effigy (Misner Site); B: Human Effigy (from pipe -- reworked and drilled as a pendant; Misner Site); C: Bowl Drilled for Insertion of a Wooden or Reed Stem (Freelton Site).

human effigy pipes appear on Neutral sites. That the sunken cheeks of these effigy faces, stylistically depicted with parallel incised lines, portray more probably a sucking rather than blowing action, suggests that the individuals represented on these pipes were perhaps the practitioners of this healing activity.

Other Organic Artifacts

Due to comparatively recent deposition and favorable soil chemistry, artifact preservation is generally excellent on Neutral period sites. Dry or well-drained conditions have occasionally favored even the preservation of structural wood (Lennox 1984a), and under rare circumstances, in waterlogged conditions or in association with items of copper or brass, artifacts of wood, bark, skin and cloth have been recovered (Lennox 1981; W. Kenyon 1982). Wooden items which have been recovered include bowls and ladles, while hide pelts, and most rarely, preserved clothing also have been recovered from historic Neutral sites (e.g. Ferris 1987b; W. Kenyon 1982; Figures 13.15 & 13.16).

Exotic Commodities (European and Native Trade Goods)

The archaeological record can speak volumes about Neutral relations with surrounding groups, by documenting within site collections raw materials and artifacts procured and/or manufactured by other peoples, and then traded to Neutral communities. Exotic goods have been recovered from 15th and early 16th century Neutral sites, although it is not surprising that only with the onset of the commercial fur trade, after A.D. 1580, was there a dramatic quantitative increase of European and even exotic Native manufactured items. Since the types and frequencies of exotic goods present on sites do change significantly through the Neutral sequence, discussions here will be

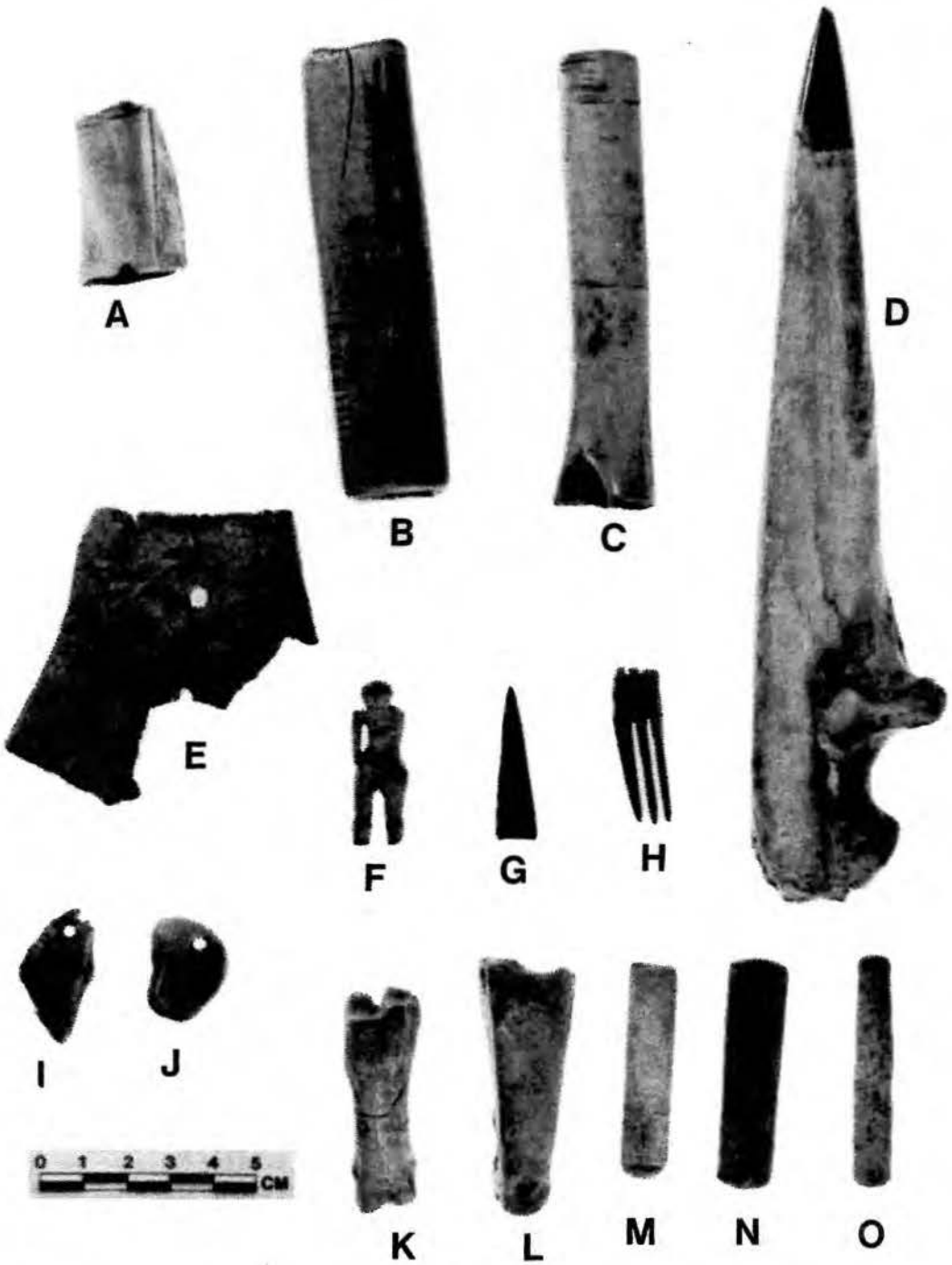


FIGURE 13.13: Worked Bone/Antler Artifacts. A: Bead (Freelton); B-C: Bone Sucking Tubes (Freelton); D: Bear Ulna Dagger (Ivan Elliot); E: Cut, Ground and Drilled Turtle Shell (Freelton); F: Antler Human Effigy (Freelton); G: Antler Projectile Point (Freelton); H: Antler Comb Fragment (Freelton); I: Brachiopod Fossil Pendant (MacPherson); J: Sucker Otolith Pendant (MacPherson); K-L: Incised and Ground Deer Phalanges (MacPherson); M-O: Antler Drifts for Flint Knapping (Freelton).

FIGURE 13.14: Antler Comb from the Grimsby Site. Courtesy of the Royal Ontario Museum, Toronto.

presented in chronological order, beginning with the 15th century. However, it is worth noting that the foundations for the historically documented networks that criss-cross the Northeast during the 17th century are trade routes that were well-established in the distant past, as amply demonstrated in the preceding chapters of this volume. For a fuller discussion of European-Native relations during the historic period, in particular European economic activities, the reader is referred to Heidenreich's chapter in this volume.

The 15th Century

There is a paucity of exotic goods from Neutral sites of the 15th century, and this is not solely attributable to the small number of sites that have been intensively examined. No marine shell, Native copper, or foreign ground stone beads were reported from the Moyer site (N. Wagner et al. 1973), and only a few small columella shell beads were recovered from the excavation of a substantial midden and three longhouses at the Ivan Elliot site (W.R. Fitzgerald 1990b). While lines of communication may have existed between distant regions at this time, imperishable goods suggest they were at best intermittent and most probably indirect.

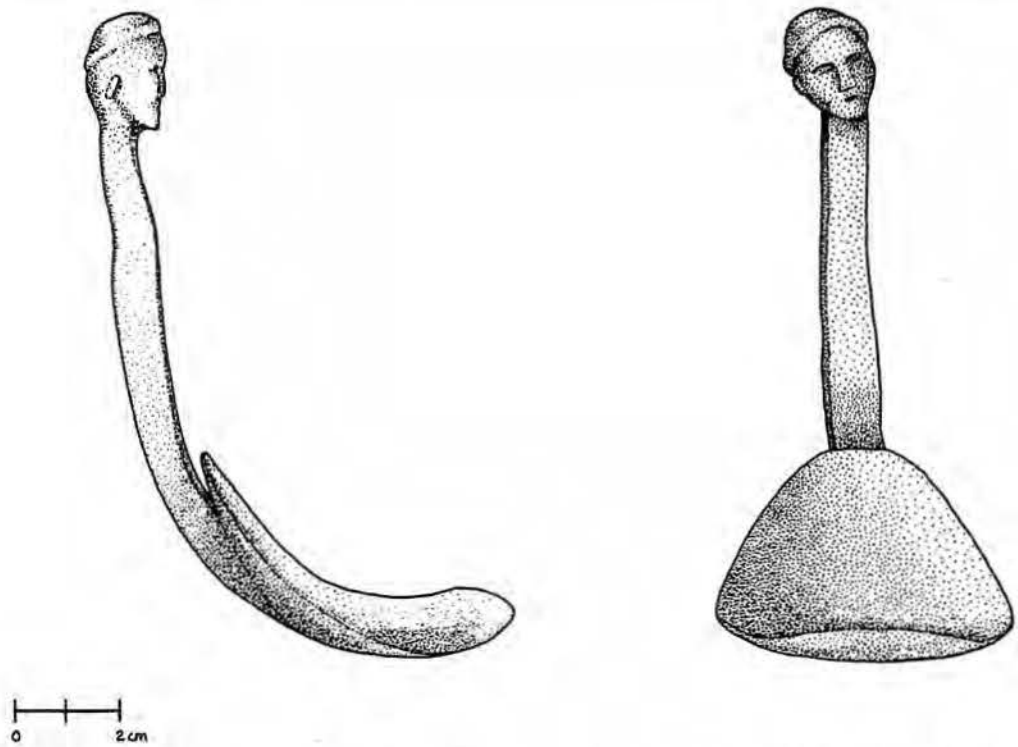


FIGURE 13.15: Wooden Spoon from Grimsby Site. Courtesy of the Royal Ontario Museum, Toronto.

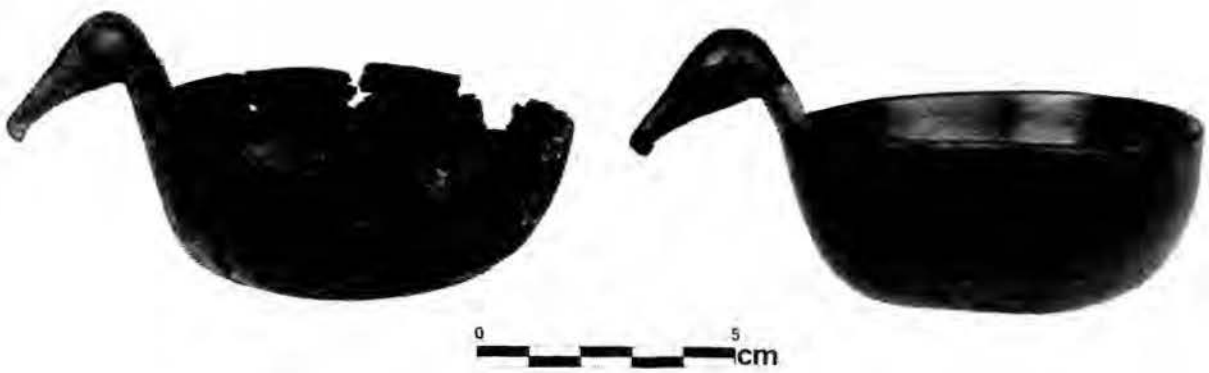


FIGURE 13.16: Wooden Bowl (Original and Reconstruction) from the Grimsby Site. Courtesy of the Royal Ontario Museum, Toronto.

The Pre-Fur Trade Era (A.D. 1500-1580)

Evidence documenting the presence of Europeans along the Atlantic Seaboard and upper St. Lawrence during this period, is rare in southern Ontario until the latter part of the 16th century. Conceivably the fragments of European copper and brass, reworked into ornaments, that are very rarely recovered from 16th century sites originated from these contacts.

The extensive excavations on the MacPherson village (W.R. Fitzgerald 1990a) provide a glimpse into the full range of foreign commodities on mid-16th century sites. Even though substantial artifact samples were recovered from the excavation of a number of middens and 20 longhouses (approximately 90% of the village was excavated), a single brass bead was the only item of indisputable European origin recovered. Six Native copper beads, seven marginella shell beads, and one small columella shell bead were the only other foreign goods recovered. At the nearby Zap (Haynes) site, and despite large scale excavations (9 longhouses, 2 middens, and six individuals from three burials), the only exotic remains included several Native copper beads and a single (Nueva Cadiz Plain) glass bead of Spanish origin (MPA 1989b). If these two sites had not been so thoroughly excavated, the single definite piece of European material from each site likely would not have been recovered.

Generally, in the Pre-Fur Trade era, negligible amounts of European metal scrap reached the lower Great Lakes area and were reworked into ornamental items, generally small rolled tubular beads. Occasionally an unmodified European article is found, such as the glass bead from the Zap site or the small iron celt from the Huron/Petun Sopher ossuary (Noble 1968, 1970). In all likelihood, these bits of scrap were accepted and used as were the other foreign Native commodities which reached the Neutral at that time. However, these Native exotic goods, such as marginella and columella shell, Native copper, distant lithic supplies, and non-local groundstone beads, also appear to have been scarce on pre-A.D. 1580 Neutral sites.

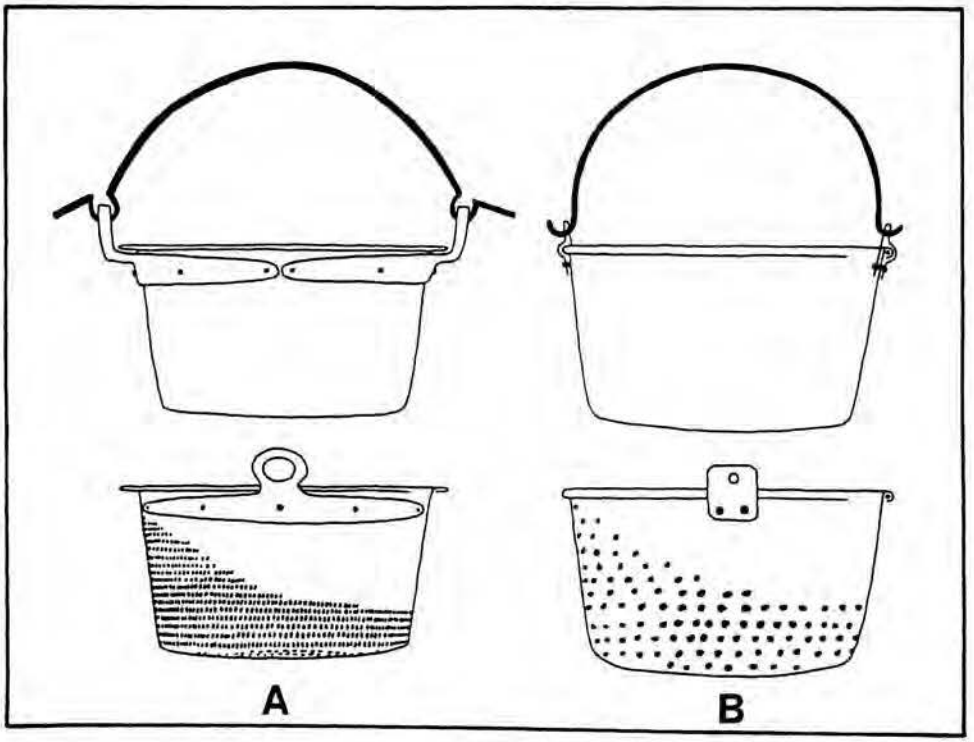
The Early Fur Trade Era (A.D. 1580-1630)

Both European trade goods and Native exotics appear in increasing numbers on Neutral sites dating to this period. Ornaments fashioned from European brass and copper scrap persist in substantially greater frequency and diversity of style. This era is further distinguished from the Pre-Fur Trade era by the sudden appearance of a variety of intact European goods and marine shell, most of these being deposited in burials.

The initial trade assemblage of European goods is associated with Glass Bead Period 1 (ca. A.D. 1580-1600), and consists of, in addition to the distinctive glass beads of this period such as the black and white Frit Core or Faience type (e.g. a ceramic core coated with a dark blue-black glass and decorated with white glass appliques; see I. Kenyon and Kenyon 1983:60), the iron-banded copper kettle (Figure 13.17a), the heavy iron axe (I. Kenyon and Kenyon 1987; W.R. Fitzgerald 1988), and the long-bladed knife (Figure 13.18-1,2). Native sites possessing GBP1 European trade assemblages from Nova Scotia, the lower Susquehanna River near Chesapeake Bay, western New York and southern Ontario, while exhibiting quantitative variability, are indistinguishable in the kinds of goods recovered.

The increased availability of sheet copper and brass resulted in a diversity of likely locally Native manufactured ornaments during this Early Fur Trade era. In the lower Great Lakes area, sheet alloyed copper modified into rings and bracelets are common, and is most evident on burial sites such as Tregunno (I. Kenyon 1986), Milton Heights (Ferris 1987b), and Snider (W.R. Fitzgerald 1990a), and at habitation sites such as Christianson (W.R. Fitzgerald 1982b).

Substantial amounts of marine shell also appear on Neutral and Huron sites at this time. Large, unmodified snow and lightning whelks (Pendergast 1989; Figure 13.19) appear within burials contexts, while ornamental items such as pendants, gorgets and a host of bead styles (cf. Ferris 1987b; Figure 13.20) also appear. The relatively sudden appearance of shell and artifacts made from marine shell on Neutral and Huron sites at this time suggest that there was a dramatic intensification in the importation of these shells from primarily the Chesapeake Bay area along



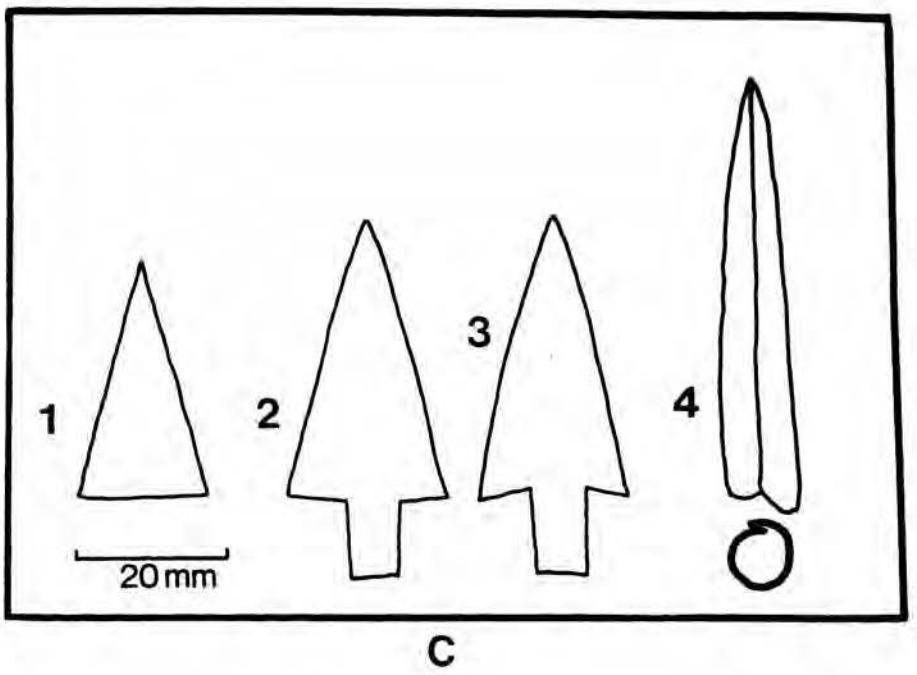


FIGURE 13.17: Copper/Brass Kettles (A-B) and Copper Alloy Projectile Points (C). A: 1580-1600 Glass Bead Period 1 Kettle; B: 1600-1650 Glass Bead Period 2/3 Kettle.

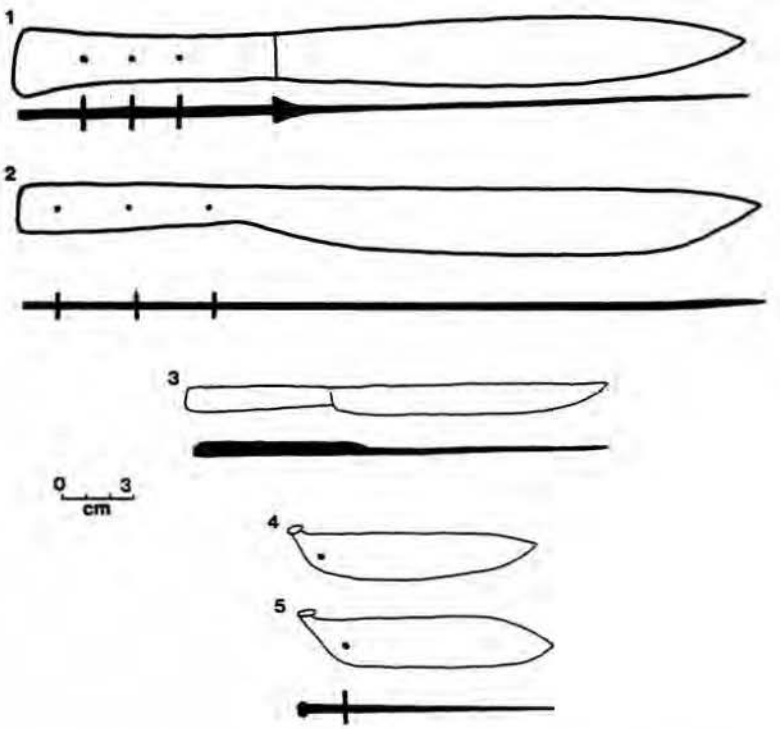


FIGURE 13.18: Iron Knives. 1: Collared Without Heal (1580-1600 Snider Ossuary); 2: Collared and Healed (1580-1600 Snider Ossuary); 3: Thickened Metal Handle (1600-1630 Warminster Huron Site); 4: Sword Pointed Clasp Knife (1620-1640 Walker Site); 5: Hawk-Bill Clasp Knife (1630-1650 Dwyer Ossuary).

the Eastern Seaboard, apparently at the same time that European trade goods were arriving into southern Ontario from the Gulf of St. Lawrence (S. Jamieson 1981; Noble 1978; Prevec and Noble 1983). Of note is the fact that on contemporary New York Iroquois sites, marine shell is comparatively scarce (Wray et al. 1987; Bradley 1987), suggesting that whatever trade route brought shell into southern Ontario, it managed to by-pass the Five Nations area of New York state.

At the latter end of the Early Fur Trade era glass trade beads distinctive of GBP2 appear on Neutral, Huron, Iroquois, and Susquehannock sites, as well as on Native sites further to the east. The glass bead assemblage from this period is mainly characterized by white and dark blue tubular and oval varieties which appear to have been manufactured by the French specifically for trade as imitations of the shell beads traded by Natives in the Gulf of St. Lawrence area (Grant 1907-1914[2]:322, [3]:158).

Post-A.D. 1600 European manufactured items tend to be of a poorer quality, characterized by the appearance of lighter but not necessarily smaller iron axes, kettles with folded-over copper alloy lugs (Figures 13.17a,b & 13.21), and a greater utilization of brass (W.R. Fitzgerald and Ramsden 1988). A greater range of commodities also begins to appear by the end of the Early Fur Trade era. Distinctive to the GBP2 period are copper alloy ladles (Figure 13.22), and a style of knife characterized by a thickened iron handle (Figure 13.18-3).

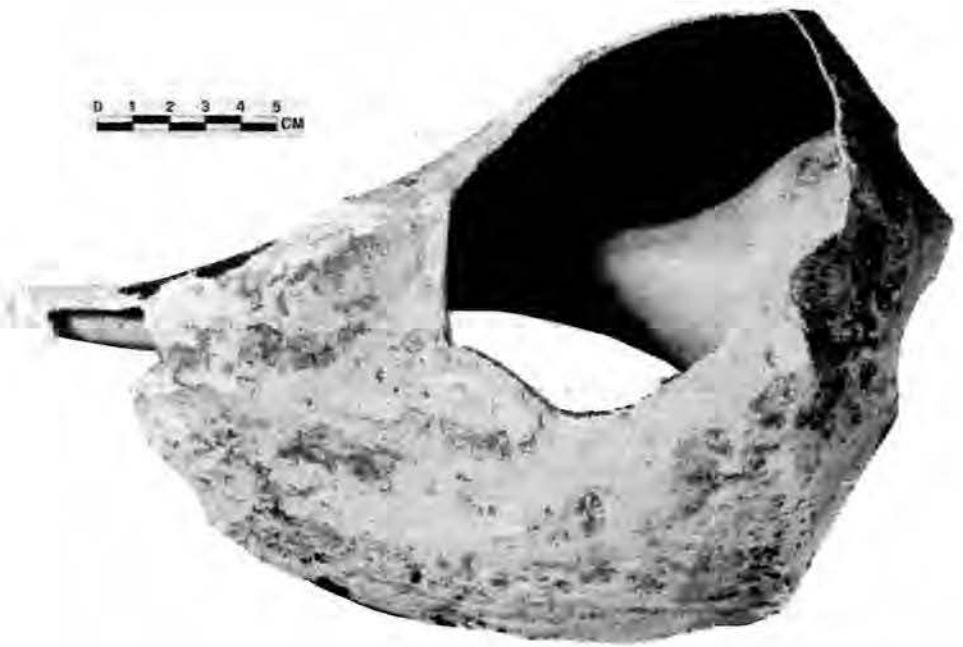


FIGURE 13.19: Snow Welk Shell from Misner Cemetery.

Increasing Trade (ca. A.D. 1630-1650)

This stage coincides with Glass Bead Period 3. During the 1630's and 1640's there was a significant increase in the presence and diversity of European goods on Ontario Iroquoian sites. It also coincides with devastating outbreaks of European-introduced diseases between A.D. 1634 and 1640, combined with starvation and possibly a series of severe winters, which ultimately greatly affected Iroquoian societies. The combined effects of these events is reflected in an increase in the frequency of European items, along with more replacements of Native utilitarian artifacts, a florescence in certain Native artifact styles, and, as discussed later in this chapter, a decrease in longhouse size, and the appearance of multi-ossuary cemeteries amongst the Neutral. What is difficult to discern is whether the extent and nature of the European assemblage during GBP3 is a result of intensified European trading efforts or the compounded effects of what was happening to Neutral society.

The nature of European goods recovered from GBP3 sites in Ontario exhibits a continuity of types and trends from the preceding period. The white and blue glass beads of GBP2 are replaced by a predominantly red and turquoise assemblage of round and tubular beads during Glass Bead Period 3 (I. Kenyon and Kenyon 1983). Also, the lower copper content alloys metal trade goods increase during this period (W.R. Fitzgerald and Ramsden 1988). As well, iron axes continue to be light, but there is also a greater range of weight and size classes which appear during this period, suggesting that certain of the axe types offered in trade were designed for different functions. For instance, during GBP3 the lightest weight class of axe has been documented (1.0 to 1.5 livres). These axes may have been belt hatchets rather than felling and chopping axes (I. Kenyon and Kenyon 1987; W.R. Fitzgerald 1988). Finally in the area of utilitarian goods, while many knife styles present earlier on Neutral sites continue into this later era (Figure 13.21b), a notable GBP3 introduction is the clasp knife (Figure 13.18-4,5).

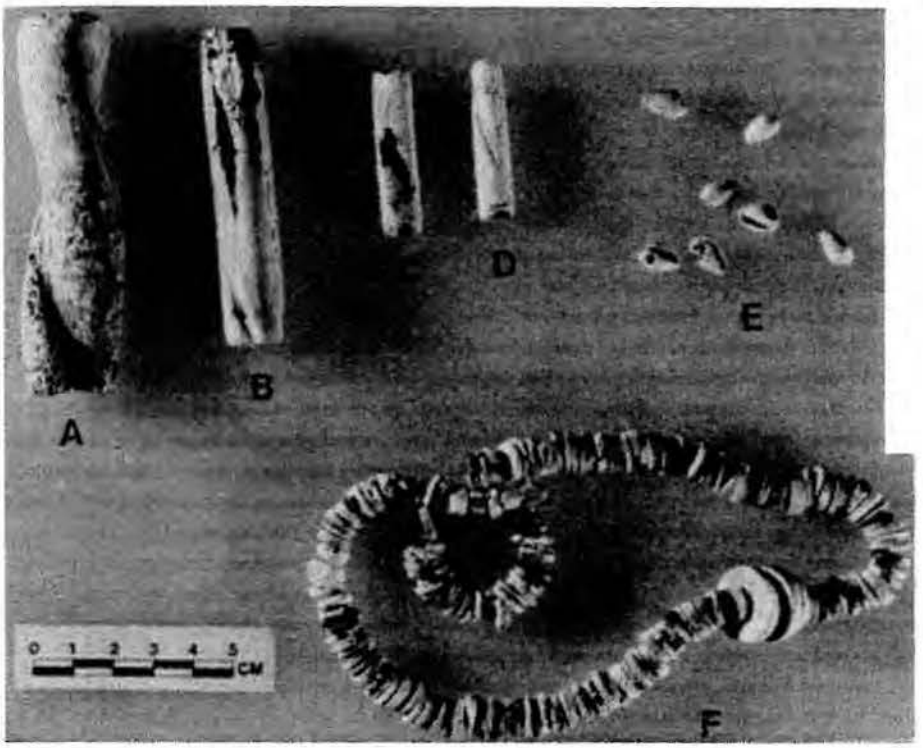


FIGURE 13.20: Marine Shell Artifacts from the Misner Cemetery. A-B: Columella Pendants; C-D: Columella Shell Beads; E: Ground Marginella Shell Beads; F: Discoidal Beads.

The diversity of ornamental items fashioned by Natives from copper alloy scrap, so noticeable during GBP1 and GBP2, diminished during GBP3. This decrease may be due in part to the appearance of European manufactured items specifically designed to serve as ornaments. These items include metal religious medallions (Figure 13.23a), Jesuit rings (Figure 13.23b), and sheet brass bells (Figure 13.24).

Undoubtedly related to the increasing presence of year-round European occupants in southern Ontario during the 1630's and 1640's is the appearance, albeit in small amounts, of miscellaneous items such as scissors, burning glasses, drinking glasses, keys, European ceramics, coins, and firearm parts on Native sites. Their occurrence is likely due to the presence of Europeans in these communities or individuals having received them as novelties. None of these goods, however, are present in amounts that would suggest they had any widespread use or trade.

With large numbers of craftsmen likely being among the casualties of the epidemics, some loss of traditional knowledge and skills would have occurred. Among the Neutral, it is only during this period that projectile points and scrapers manufactured from brass, copper, and iron scrap, and European-manufactured implements specifically made as replacements of Native implements (e.g. lance heads and barbed harpoons; Figure 13.21c) appear on sites. The Neutral were pre-eminent lithic specialists, but, while this technology was not totally abandoned during GBP3, the more readily manipulated metal resource began to be utilized more often, likely due to its greater abundance and availability in Neutralia (Figure 13.17c).

The influx of large amounts of marine shell into southern Ontario persisted into this period. A wide variety of intact univalves (snow, lightning, knobbed, and pear whelk, and marginella), as well as manufactured ornaments and ceremonial items such as rattles, ladles, and drinking cups (W.R. Fitzgerald 1982c:133-136), continue to be present on Neutral sites. Again, this indicates that the intensive trade in this commodity from the Eastern Seaboard continued to flourish during this latter era (W.R. Fitzgerald 1982c; Warrick 1983; Pendergast 1989).

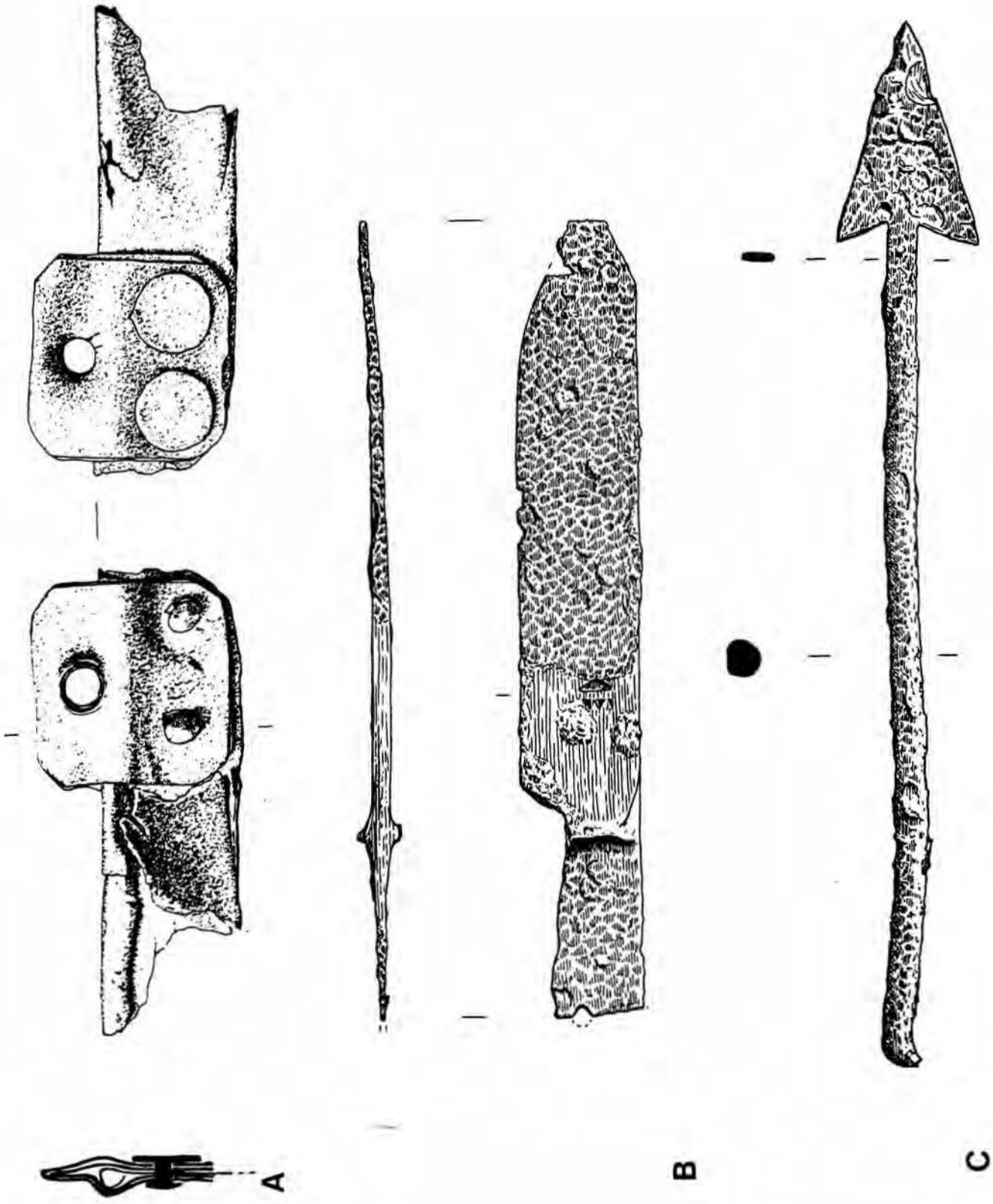

A
B
C

FIGURE 13.21: Metal Trade Goods. A: Detail of Brass Kettle Lug with Copper Rivets; B: Detail of Iron Knife; C: Iron Harpoon or Lance Head. Drawings by Nick Adams.

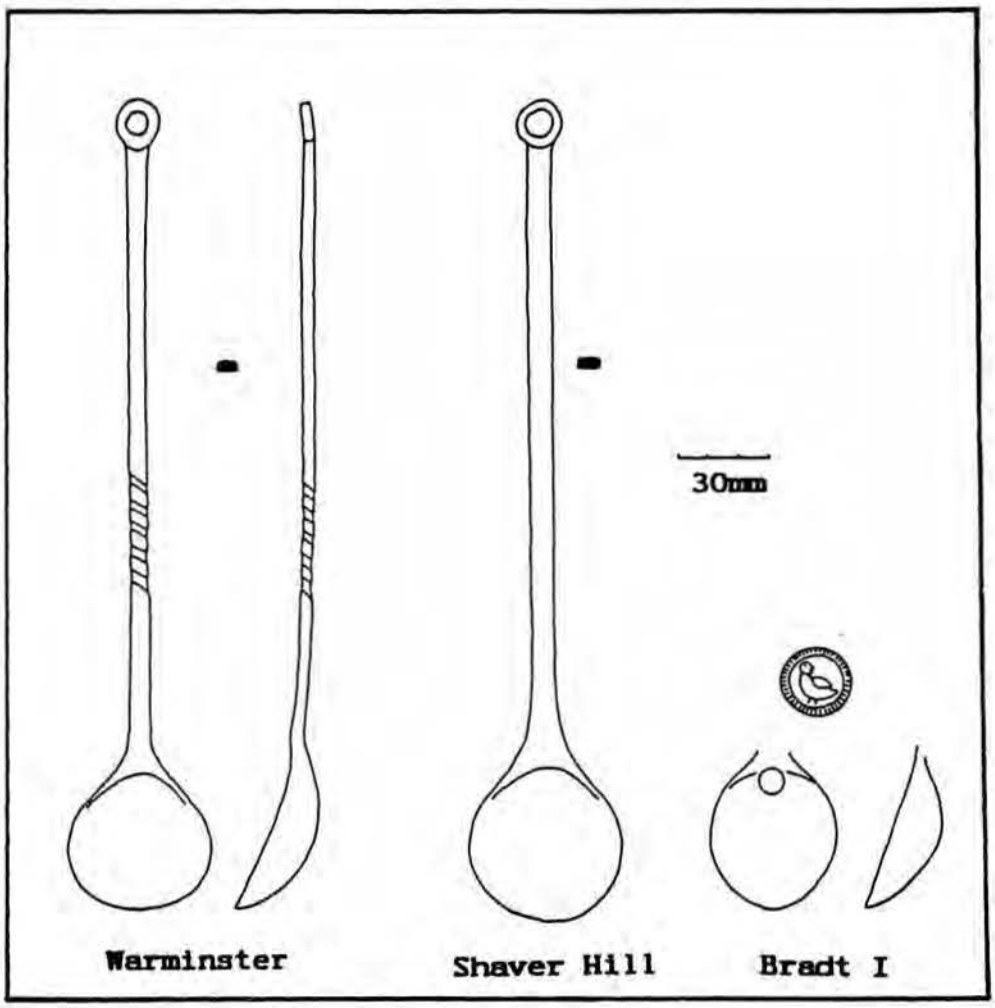


FIGURE 13.22: Brass Ladles.

Beginning late in GBP2 and fluorescing during GBP3 on Neutral sites, is the appearance of a red stone bead assemblage (Fox 1980g). The raw material for these beads consisted primarily of catlinite, quarried aboriginally from Minnesota and South Dakota (Sigstad 1970:377), and red siltstone, recovered from secondary deposits on Manitoulin Island and probably elsewhere along the north shore of Georgian Bay (Fox 1980g). The absence of unfinished catlinite and red siltstone items on Neutral and Huron sites, and the vast abundance of the material present in various stages of manufacture on sites occupied by Petun or wintering Odawa (also known as the Ottawa or the Cheveux relevés) suggest that one or both of these latter groups were manufacturing and distributing these red siltstone and catlinite beads to both the Neutral and the Huron (see also Fox: Chapter 14). These two resources, especially the more local red siltstone, were extensively exploited for ornament manufacture. The recovery of beads and other ornaments (including small effigies) attests to this increase, in particular from burial contexts at GBP3 Neutral sites such as Dwyer (W.R. Fitzgerald 1982c) and Hood (Lennox 1984a). On earlier sites (e.g. Milton

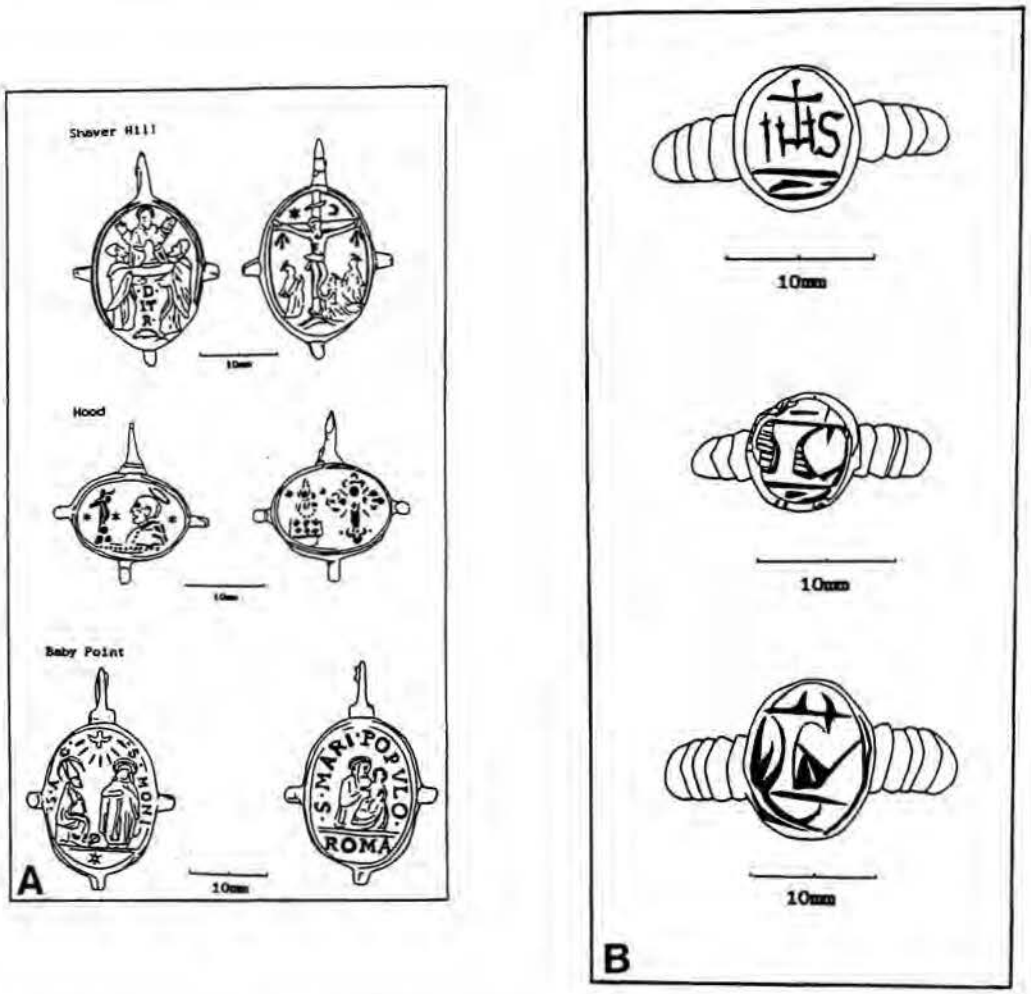


FIGURE 13.23: Religious Artifacts. A: Medallions from Various Sites; B: Jesuit Rings from the Hood Site.

Heights [Ferris 1987b:25-26], Christianson and Shaver Hill [W.R. Fitzgerald 1982a, 1982b:194, 1982c:178]), beads manufactured from this material tend to be discoidal and short tubular, perhaps in imitation of popular marine shell shapes.

During GBP3, along with the exponential quantitative increase of beads made from catlinite and siltstone, is the appearance of longer tubular varieties. These are comparable in length to the red tubular glass bead type which dominates the later GBP3 bead assemblage. While catlinite is a darker burgundy in colour with very small pink flecks, the colour of red siltstone is almost indistinguishable from the shade of red used in the glass beads. Furthermore, a subtle black graining is present in the glass beads which is also present in the red siltstone. Indeed, many of these glass beads were deliberately modified by Natives, in order to make them more closely resemble groundstone beads, by grinding off the shiny patina of the glass exterior, giving the bead a duller, more granular appearance.

Exotic Material Culture - Conclusions

An unfortunate underestimation of Native cultural independence and perseverance has encouraged the belief that the appearance of Europeans triggered an immediate abandonment of Native technologies and beliefs. It is becoming evident that there was not a wholesale renunciation of Native culture when European goods became available, or even after the epidemics had taken their toll.

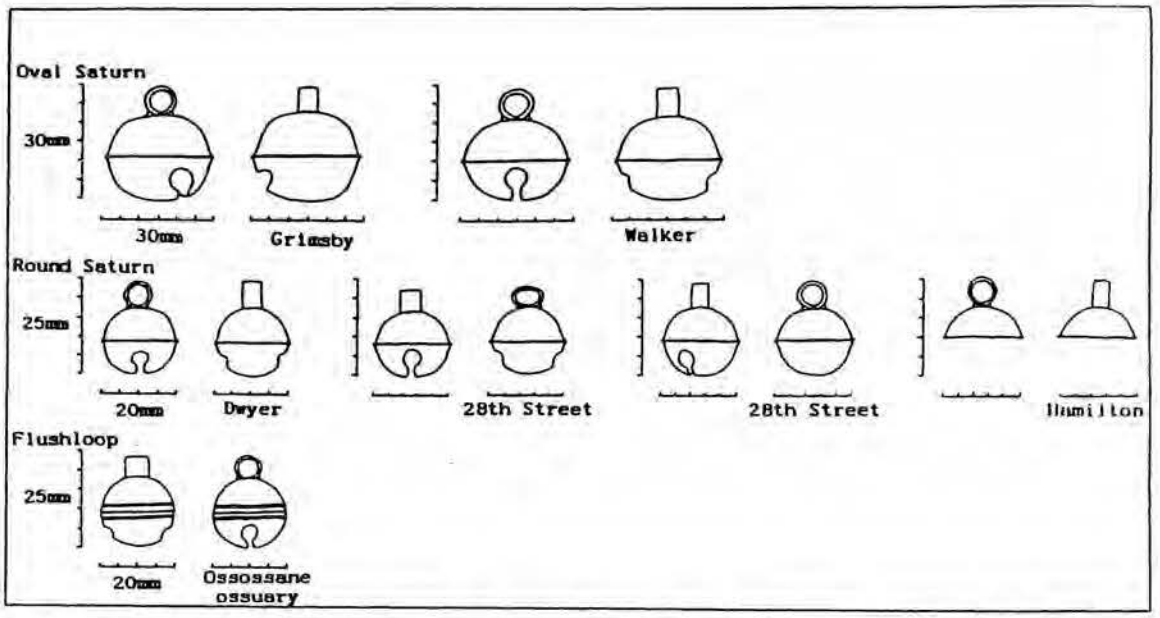


FIGURE 13.24: Sheet Copper Alloy Bells from Neutral and Huron Sites. All bells are brass with the exception of the Ossossane Huron specimen.

Two events related to the arrival of Europeans, however, greatly influenced late 16th and early 17th century developments in the lower Great Lakes. First, the late 16th century initiation of the commercial fur trade; and second, the A.D. 1634-1640 period of European-introduced epidemics.

Political alliances and epidemics, moreso than any inherent superiority of European material culture, appear to have been responsible for an increasing presence of European commodities. The first European introductions seem to have been considered as novelties, perhaps having supernatural power, which were appropriate to inter unused with the dead. The later acceptance of European goods was largely selective, being restricted to items that did not have readily available, easily manufactured, or durable Native equivalents -- for instance, axes, knives, and ornaments that had symbolic associations. Even during the shortened post-epidemic era, Native technologies still prevailed and, in some instances, fluoresced.

Neutral Settlement and Subsistence Patterns

Site Distributions

As noted earlier, the use of the term Neutral, first applied by Champlain in reference to the historic peoples located between the Huron and Iroquois, has been extended to include their ancestors, back to ca. A.D. 1400. Historic Neutral sites appear in a number of clusters around the western end of Lake Ontario and eastwards across the Niagara Peninsula. Prehistoric sites are found here as well, but are also distributed over a much larger area to the west (Figure 13.1). West of the Grand River are a number of geographically discrete site clusters (e.g. London-St. Thomas, Chatham, Kitchener). These include sites that have been assigned Neutral cultural affiliation, and clearly date prior to the mid-16th century (Foster 1982a, 1990; Horne 1987; Keron 1981b; R. MacDonald 1986; Pearce 1984; D. Smith 1977). This distribution led early researchers such as Houghton (n.d.a, n.d.b) and T. Lee (1952) to suggest a migration of peoples from the west into Historic Neutralia. Ian Kenyon's observation (1972:6) of a sharp increase in Neutral site density in historic times in the Hamilton area, supports this hypothesis.

The circumstances of this massive exodus from the west are not yet clear, however, two reasons for the migration may be proposed: access to European goods to the east, and conflict with the Fire Nation to the west. The proposition that the Neutral migration was due to an attraction for European material culture can be eliminated since this migration occurred decades before the onset of the commercial fur trade (Turgeon 1986). On the other hand, and as previously discussed, it is historically recorded that the Neutral were longstanding enemies of the Fire Nation (Thwaites 1896-1901 [21]:195). These people were likely Algonquian speakers and are represented archaeologically by the Western Basin Tradition of the Toledo-Detroit-Chatham area. Creating a buffer zone between themselves and the Fire Nation is a more plausible explanation for the Neutral migration since an intensity of hostilities between these groups is clearly evident by the presence of extensively fortified 16th century settlements, generally with earthworks, on both Neutral and Western Basin Tradition sites (see Murphy and Ferris: this volume).

Since Houghton's initial supposition, material culture evidence for this eastward migration has been slowly accumulating. Similarities between cultural materials from distant sites on either side of the Grand River exist and we are beginning to be able to trace the movements of particular groups across this area (see ceramic section, above).

Defining Neutral Site Types

Daillon, as a direct observer, enumerated a range of settlement types for the Neutral Iroquoians:

> (La) Nation en nonbre de vingt-huit, tant bourgs, villes que villages,...puis plusiers petits hameaux de sept a huit cabanes bastis en divers endroit commodes pour la peche, pour la chasse, ou pour la culture de terre (Daillon 1866[3]:802)

This passage has been translated as:

> The nation consists of twenty-eight towns or villages,...and also of several little hamlets of seven or eight cabins located in various areas for fishing, hunting, or farming (W.R. Fitzgerald 1984:3).

Randle Cotgrave's 1611 *A Dictionarie of the French and English Tongues* (Alston 1970) distinguishes between each of these terms and reflects the essence of Daillon's attempt to describe Neutral settlements in 17th century French terminology:

> Bourg: A Bourough, or great Towne (without wals or ditches).
> Ville: A Towne; an incorporate, or enclosed Towne: a Citie.
> Village: A Village; a countrey towne; consisting of many houses joined together; therein to differ from a Hameau (a hamlet) which consists but of a few, and those either scattered or not verie neere together.
> Hameau: A hamlet; a small village.

Following the 1640-1641 mission of Brebeuf and Chaumonot, Lalement stated that the two Jesuits passed through eighteen "bourgs" or "bourgades" (Thwaites 1896-1901 21:189). Cotgrave translates "bourgade" as a village, hamlet, or small borough. Here Lalement simply distinguishes between "great townes" (bourg) and smaller settlements (bourgades).

Archaeological research has suggested a range of settlement types through the whole of the Neutral sequence which, in a general sense, seem to correspond to Daillon's distinctions. Noble (1984:13) suggests that Neutral settlements which were occupied on a year-round basis display a range of site sizes, those over 5 acres being towns and those in the 1-5 acre range being villages. Moreover, some of the larger sites, such as Walker (M. Wright 1981), seem to lack a defensive wall or palisade, and thus specifically resemble the "bourgs" as defined by Cotgrave rather than the "villes."

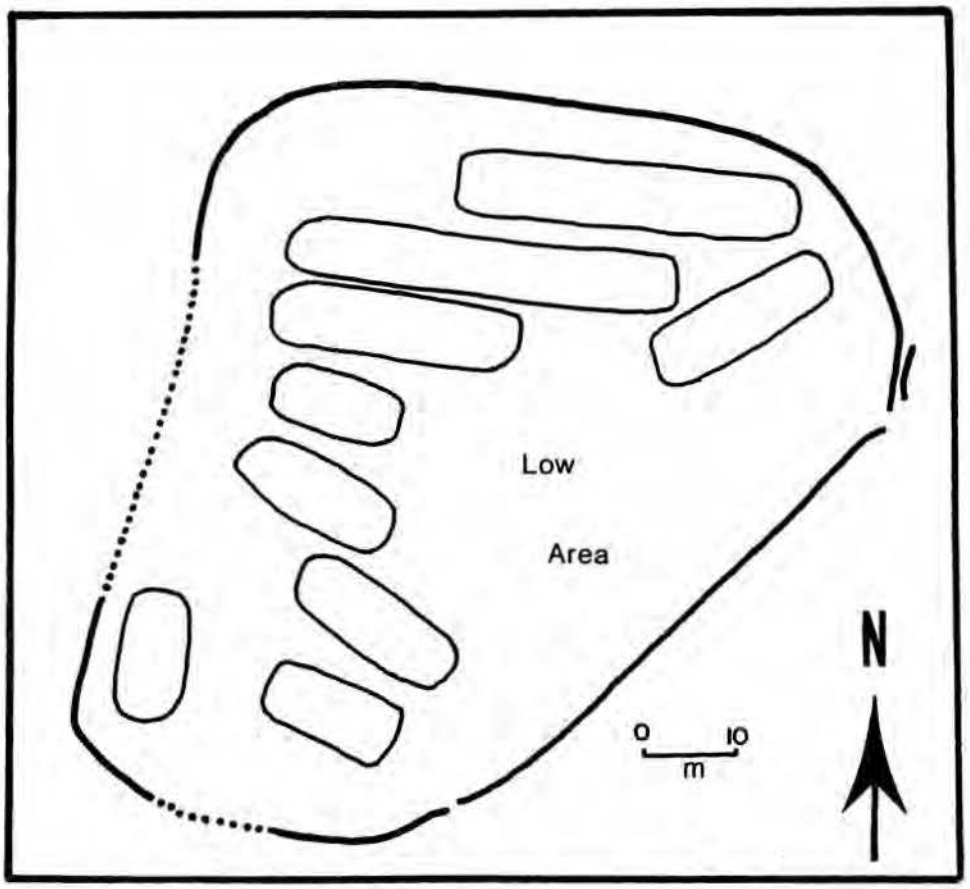


FIGURE 13.25: The Early Sixteenth Century Raymond Reid Village.

For smaller sites, in the archaeological literature there is various usage of the term hamlet depending on whether one wishes to emphasize the small village or the special purpose fishing, hunting or agricultural camp described by Daillon (Lennox 1984b:266; Noble 1984:13). To distinguish between these site characteristics it has been suggested (Lennox 1984b:266) that the term hamlet be used to refer to small villages of about one acre in size that were occupied on a year-round basis (Figure 13.25). Small settlements of one or two houses that were occupied on a seasonal basis, primarily for the purpose of agriculture, are referred to as agricultural cabin sites, many of which have been excavated in the London vicinity (Keron 1986; Pearce 1983, 1984; Pearce and Catsburg 1985; Poulton 1985a; Timmins 1990). The Smallman site (Pearce 1983) provides a good example (Figure 13.26).

The diversity in site size within any given historic cluster of Neutral sites, such as larger villages associated with several smaller hamlets, has suggested a model of intercommunity relationships known as the capital-satellite village model (I. Kenyon 1972:7; Noble 1972b:6, 1978:156). Comparisons between the settlement patterns and material culture from contemporaneous village and hamlet occupations has provided some detail for this model (Lennox 1984b:266-272). The model suggests that the inhabitants of these larger villages were involved in day to day subsistence activities, as were the inhabitants of smaller hamlets. However, these larger village communities also played a central, controlling role in regional interaction and exchange -- in a sense a political and economic capital not only for the site's inhabitants, but also for the nearby communities represented by the hamlet sites.

In addition to hamlets and villages, archaeological investigations have also identified small fishing (Fox 1986a; I. Kenyon 1972; J. MacDonald 1986a; Prevec and Fox 1989), and hunting (Ferris 1986; Lennox 1987a) camps. Some of these small extractive camps appear in the archaeological record to be little more than isolated activity loci,

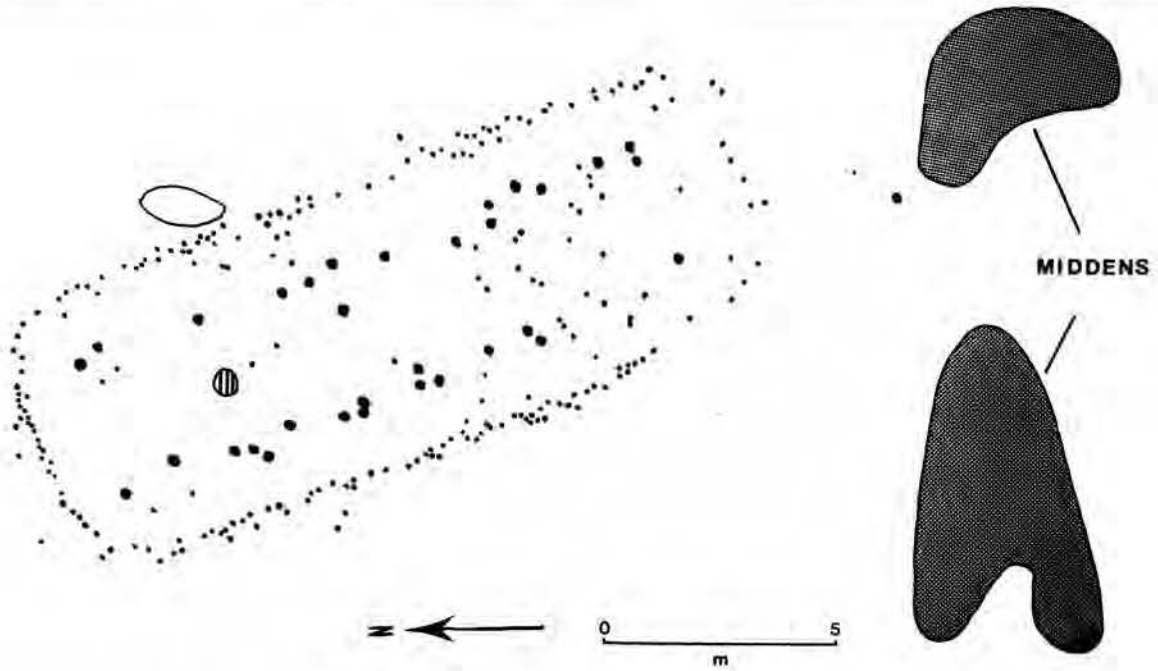


FIGURE 13.26: The Fifteenth Century Smallman Agricultural Cabin Site. Redrawn after Pearce (1983).

which upon excavation produce few artifacts, and rarely exhibit any structural remains other than the occasional post, hearth or pit feature (Hagerty and Lennox 1990; Lennox 1987a; Murphy and Hagerty 1990), reflecting their short-term, special purpose nature.

It is interesting to note an apparent change in site type preference and settlement pattern between the prehistoric period, particularly in the London vicinity, and the historic period. Within the London cluster of Neutral sites, numerous seasonally occupied agricultural cabin sites are situated around larger villages (Pearce 1983, 1984). But during the historic period, there is a greater emphasis on the use of hamlets, occupied year-round, and a lack of seasonal encampments. This difference may be the result of changing political or economic factors, or may simply be the result of a sampling bias amongst historic Neutral excavations which have focused on the larger settlements. Certainly, recent excavations west of Hamilton suggest that the latter may be the case (e.g. Dodd 1990; Hagerty and Lennox 1990).

Neutral Settlement Patterns

Extensive survey and excavation work have provided abundant information on Neutral settlement patterns. Neutral village clusters generally are found on sandy loam soils of high agricultural capability, although the historic Thorold village (Noble 1980), situated on top of the Niagara Escarpment south the city of St. Catherines, is a notable exception. As suggested by I. Kenyon (1972:7), the general absence of Neutral sites on heavier soils is likely due to the agricultural inferiority of these soils. As well, Neutral settlements are rarely found along the banks of major rivers or lakeshores, except for the smaller, seasonal hunting and fishing camps. Instead, larger settlements tend to be located along smaller creeks, at headwater springs, and around marshlands.

Village sites are found in a variety of topographical situations -- many that could not be considered as having been influenced by defensive concerns. Of those that have been investigated, many settlements, especially villages and hamlets, are enclosed within some form of palisade. Palisades have generally been thought to serve a defensive function; however, the nature of palisades from certain Neutral settlements also suggest they might have provided

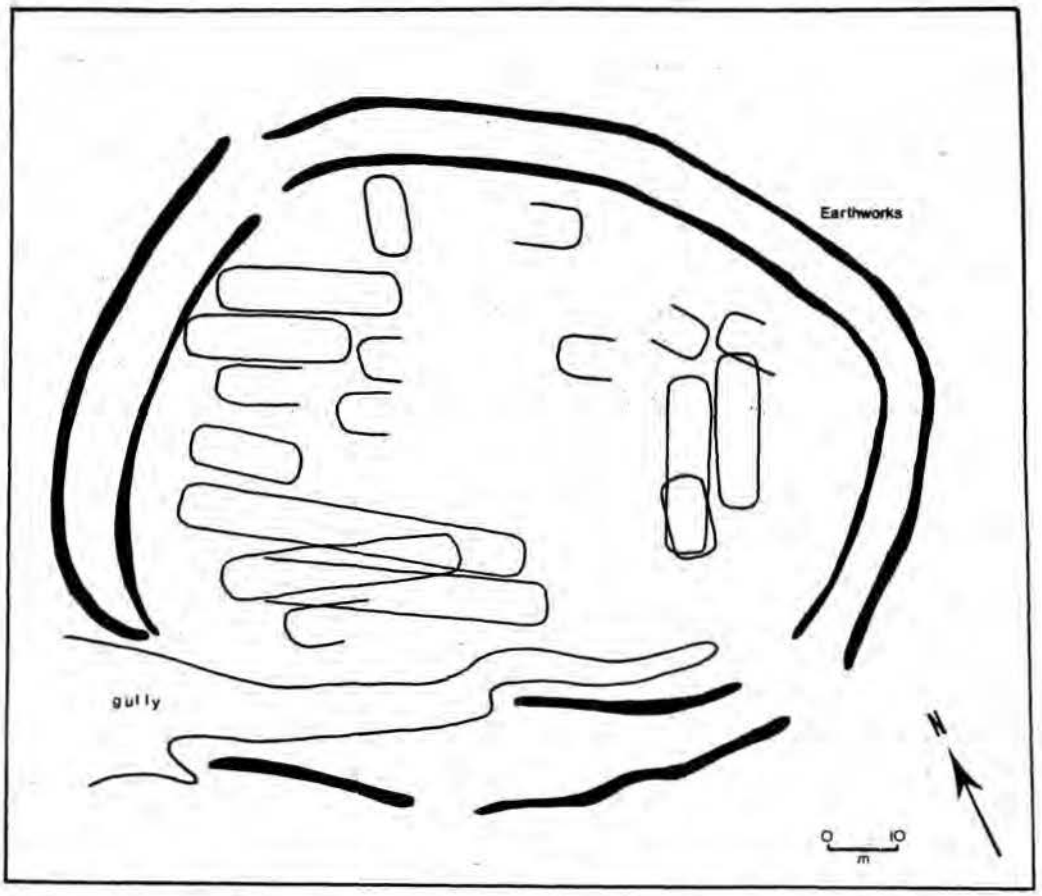


FIGURE 13.27: The Fifteenth Century Southwold Village and Earthworks. Redrawn after D. Smith (1977).

protection from animal predators, wind, and snow. These "less defensive" palisades generally consist of a single row of small posts creating an enclosure around the site area (e.g. Raymond Reid, Carlisle, Bogle II; Figure 13.25). On the other hand, clearly defensive are the earthworks and ditch enclosures at early 16th century frontier sites such as Southwold (Figure 13.27), Lawson, and Harrietsville to the west, and Buffam Street in the Buffalo area, and the complex palisade walls found on some historic Neutral sites like MacPherson, Hood and Christianson (e.g. Figure 13.30d).

The most abundant and significant structure found within Iroquoian settlements is the longhouse. While most Iroquoian longhouses follow a similar template of construction, form and internal arrangement, their variation through time, across cultural boundaries and even between adjacent structures make them one of the most interesting settlement features to study.

Longhouses were bark covered pole structures. There is notable diversity in post configuration along house side walls, but invariably, to aid in the placement and support of bark covering, two rows (an inside and an outside row), can be discerned. Most frequently they tend to be staggered or paired; however, if there was substantial rebuilding of the walls, the original pattern becomes obscured. It is of interest to note that when the two row pattern is evident, the distance between the rows is comparable to the diameter of the vertically implanted posts perhaps suggesting that the two rows held horizontally stacked poles between them (Lennox 1984a:16). A pattern that has emerged is that the depth of the inside row of posts is twice that of the outside row (Figure 13.29), suggesting that the interior row of posts provided most of the support to the house superstructure while the shallower outside row simply held the bark or the horizontal poles in place (W.R. Fitzgerald 1990b).

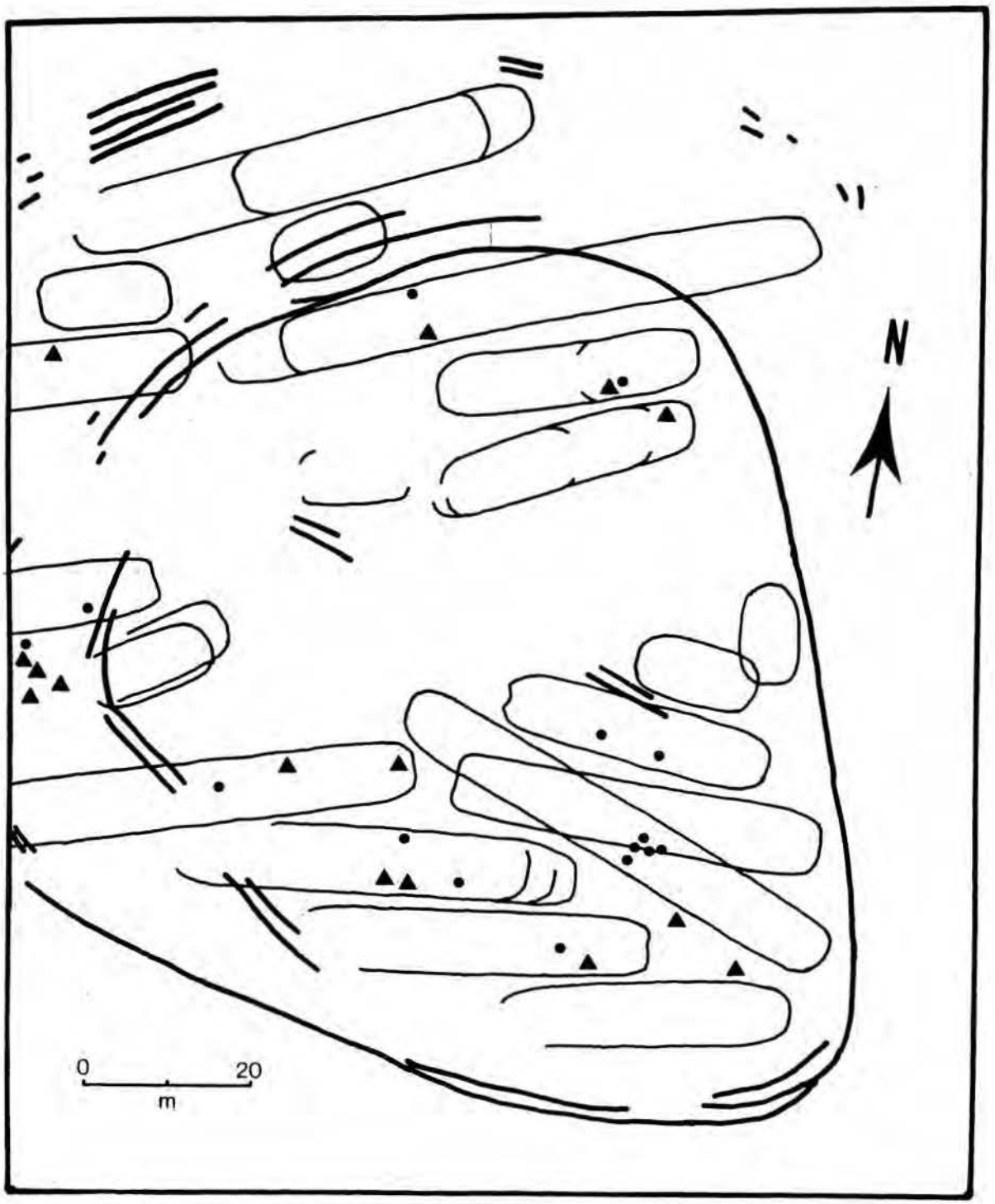


FIGURE 13.28: The Sixteenth Century MacPherson Village. Triangles and dots represent locations of human interments. Courtesy of Mayer, Poulton and Associates, London.

Occasionally, on undisturbed sites such as Walker (M. Wright 1981) or on sites that have not been ploughed too deep, wall trenches -- shallow linear features that parallel and cover the wall posts -- are evident (Figure 13.29). These features likely resulted from burying the wall coverings into the soil to prevent ground-level draughts (Noble 1984; see also Kapches 1980a).

Longhouse entrances tend to be through an opening at the end of the structure. Inside, there is a central, rather open corridor for passage down the length of the house. The main features of this central long axis are the large, elongate, central hearths and the occasional large interior support post. The hearths, upon discovery, usually consist of a shallow lens of fire-reddened subsoil. On ploughed sites they have often been obliterated. Since historical sources have suggested that two families would have shared one of these central hearths (one family on either side of the feature), when hearth patterns are found intact, their spacing within an excavated longhouse provides an estimate of the area available for individual families and thus, a means to estimate the number of people occupying a house. These family "compartments" tend to measure slightly more than four metres in length with the width being half that of the house (W.R. Fitzgerald 1982b:257, 1984:11). The number of hearths in a longhouse and in turn, the number of people who occupied a house, vary with house length.

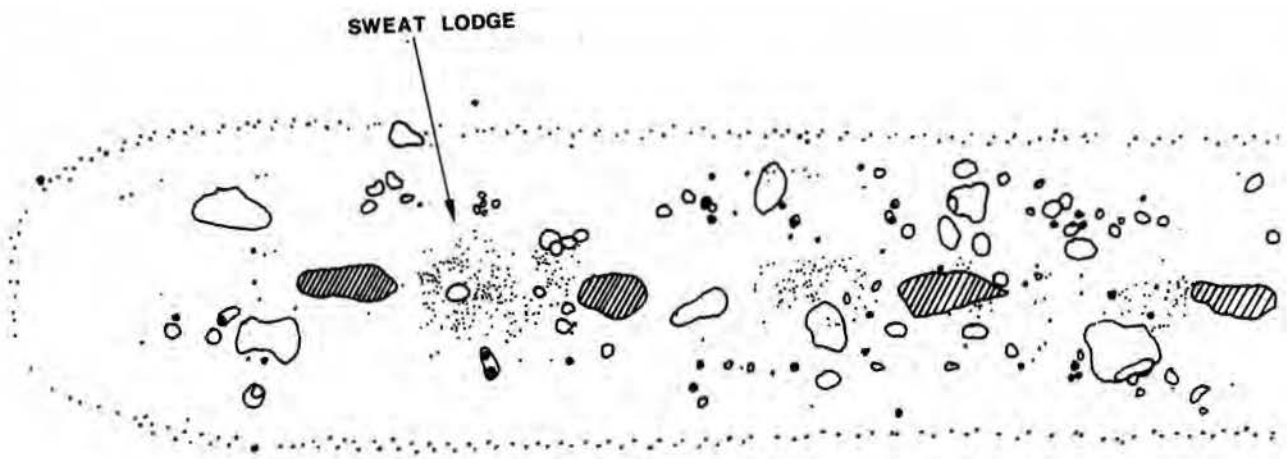
A row of posts, about a metre in from each side wall and extending down the length of the structure, is often referred to as a bunkline because platforms for sleeping and storage were constructed along the sides of the house. On house plans these often appear as "clean" floored areas (lacking subsoil features) between the row of bunkline support posts and the side wall of the house.

A feature found in longhouses from sites of the historic Spencer-Bronte Creeks and Fairchild-Big Creeks clusters, which are not found in houses from other Neutral and Iroquoian sites, are oval, straight-sided, flat bottomed pits arranged in a regular, linear pattern about a metre inside the side walls. These "slash" pits (Figure 13.30c; Noble 1972b, 1984) are presumably the functional equivalent of the 25cm to 30cm diameter bunkline support posts more frequently encountered in longhouses. At the A.D. 1600-1630 (GBP2) Christianson village, slash pits averaged 39cm long, 16cm wide, and 26cm deep (W.R. Fitzgerald 1982b:256), measurements consistent with those from other sites. Preservation at the Hood village reveals that some of these features contained vertical planks of Eastern White Cedar (Lennox 1984a:17, Figure 42).

On post-A.D. 1600 sites such as Christianson (W. R. Fitzgerald 1982b), Hamilton (Lennox 1981), and Hood (Lennox 1984a), slash pits are virtually ubiquitous. On pre-A.D. 1600 sites from the Spencer-Bronte Creeks and Fairchild-Big Creeks site clusters, however, their presence is not universal. While they are present on A.D. 1580-1600 (GBP1) sites such as Fonger (Warrick 1979, 1980, 1984a), Cleveland (Noble 1972c), and Carlisle (I. Kenyon 1986), they tend to be interspersed with large bunkline support posts. Evidence from the MacPherson village, occupied sometime between A.D. 1530 and 1570 (W.R. Fitzgerald and Saunders 1988), provides some insight into the derivation of these features. Both slash pit and bunk line support posts are present (Figure 13.31), indicating that this structural evolution was underway. Why only some groups adopted or developed this unique construction method sometime during the first half of the 16th century is open to speculation.

Bunkline patterns in longhouses are usually interrupted towards the ends of the house where communal storage areas occur, marked either by a clean floor or the presence of large storage pits. These end-of-house storage areas, if present, may be delineated by an interior wall or partition; however, there is no regular patterning in the presence of these features. Furthermore, there is no correlation between the length of the house and length of the storage section if one is present. The shape of house ends varies greatly, and may differ even on the same house. They can be rounded, squared, or tapered. It may be that the shape of the house end is dictated not so much by cultural preference but instead by the presence/absence and length of an end storage compartment.

Another feature of house interiors from the Spencer-Bronte Creeks and Fairchild-Big Creeks areas is an elongated version of the "slash" pit. These "linear end features" partition the living section of the house from the end storage compartments (Lennox 1984a:17). Perpendicular to the house side walls, these features generally occur in pairs, each housing a number of "slash" pit sized planks as indicated at Hood. In one example illustrated here (Fig-



ure 13.30c), the house end has two sets of linear end features suggesting an adjustment in the size of the end-of-house storage area. At the Christianson site, linear end features averaged 164cm in length, 18cm in width, and 25cm in depth (W.R. Fitzgerald 1982b:254).

With few exceptions, Neutral longhouses resemble those of other Iroquoian groups, and a comparison of contemporaneous Huron and Neutral house size found only minor metrical differences (Dodd 1984). There does appear, however, to be chronological variations amongst the sample of Neutral longhouses that have been excavated, the most notable difference being house length. For comparative purposes the Neutral longhouses are separated into 15th century, A.D. 1500-1580, 1580-1630 (GBP1/GBP2), and 1630-1650 (GBP3) samples. Only those structures that have been documented in publications or manuscripts and whose complete length is clearly evident are included in this discussion (Table 13.2). While there is a substantial range in the length of houses (6 to 123 metres), the trend appears to be towards shorter houses through time (Dodd 1984, 1986; Figure 13.32). The longest houses

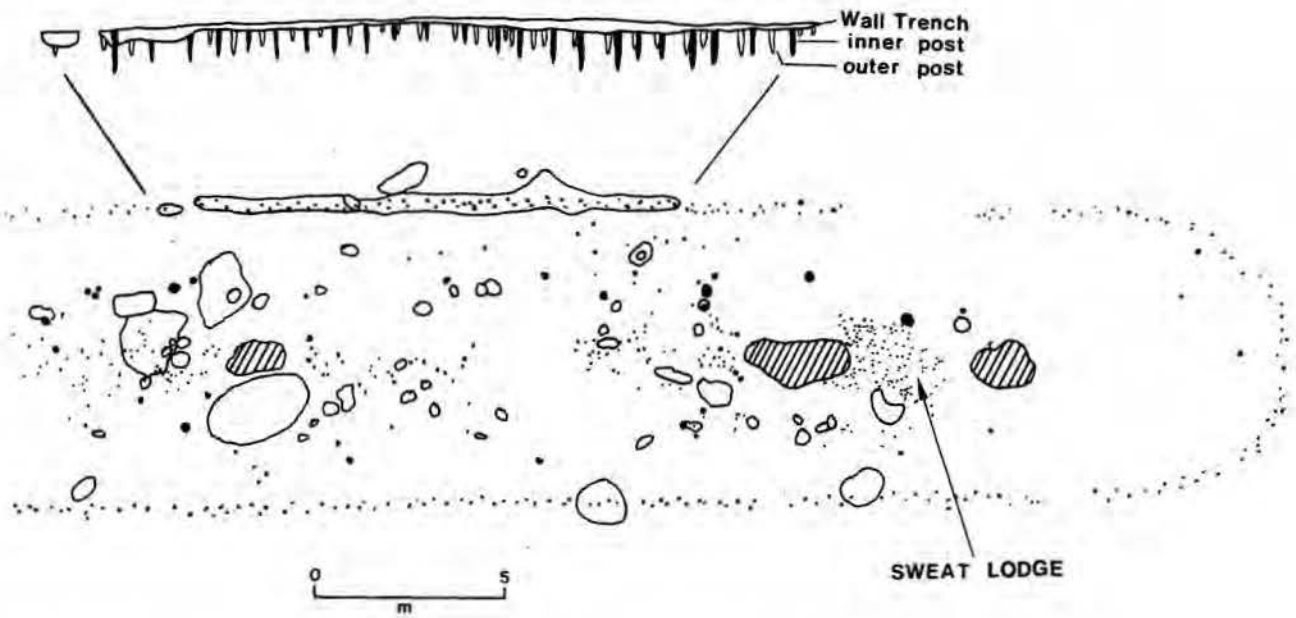


FIGURE 13.29: Ivan Elliot Site House 1. Note north wall trench plan and profile.

have been recorded from 15th century sites such as Moyer, Coleman, and Ivan Elliot, averaging 62 metres in length (W.R. Fitzgerald 1990b; R. MacDonald 1986; N. Wagner et al. 1973). The average length from 16th century sites that date prior to A.D. 1580 is 30 metres -- substantially shorter than those from the preceding period (Dodd 1986). This trend continues into the historic period, with A.D. 1630-1650 (GBP3) houses averaging 15 metres in length, although the appearance of small, 6-9 metre houses or "cabins" (e.g. Figure 13.30b) on sites of this latter period likely contributes to the overall decrease in house length average at this time.

On the other hand, house width remains generally consistent over time. Pre-A.D. 1580 houses have an average width of 7.32 metres (range= 7.0 to 7.75 metres), while the post-A.D. 1580 houses average 6.95 metres (range = 5.5 to 9.1 metres). Overall then, while longhouse width remains a fixed measurement through the Neutral sequence, house length decreases through time, reducing the number of twinned family "compartments" in these structures. This difference may suggest that, particularly during the 16th century, the number of people residing in one structure also began to decrease dramatically, which may reflect a breakdown in social cohesion.

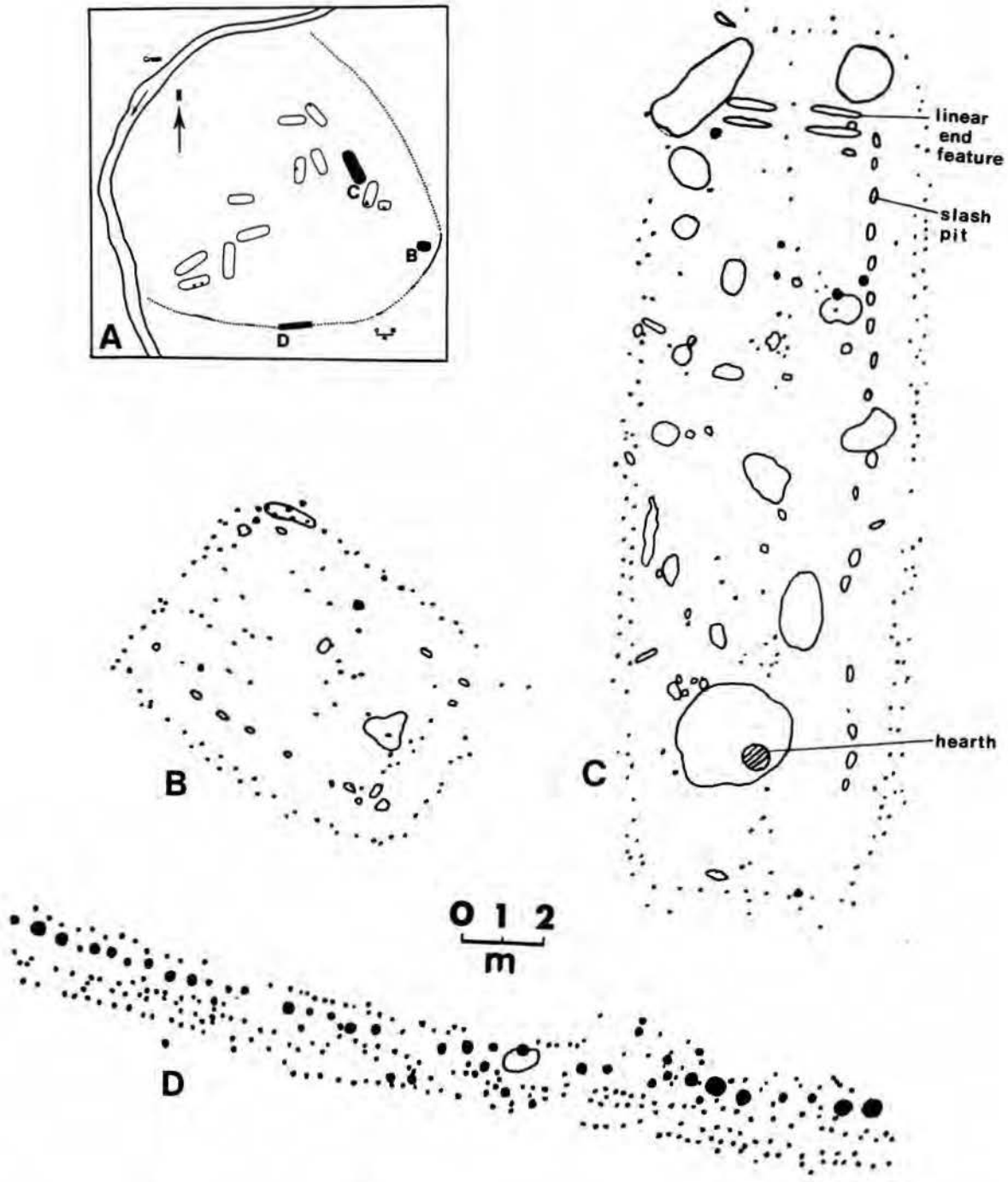


FIGURE 13.30: Village Plan (A), Cabin (B),Longhouse (C) and Palisade Segment (D) from the Seventeenth Century Hood Site.

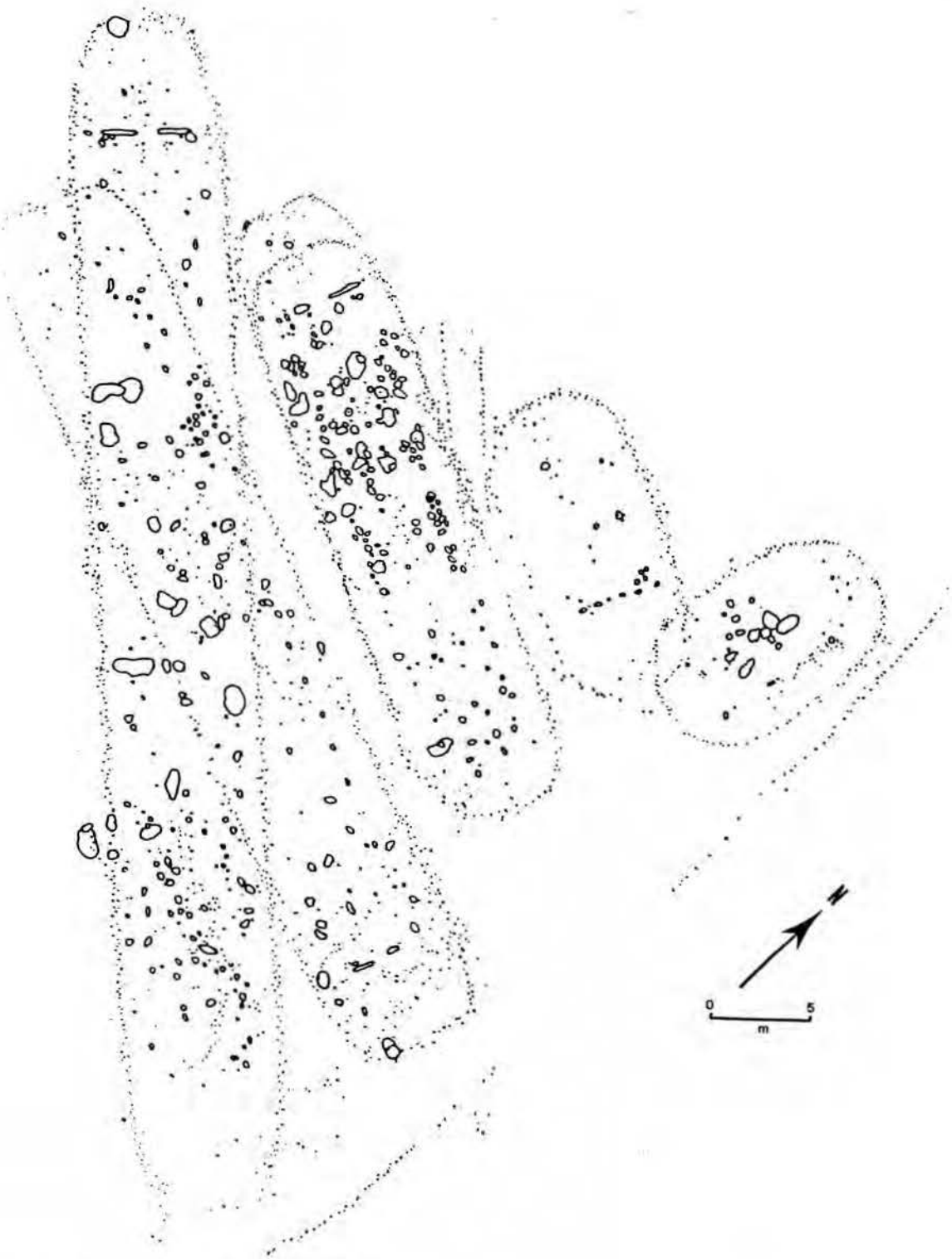


FIGURE 13.31: MacPherson Houses and Palisade.

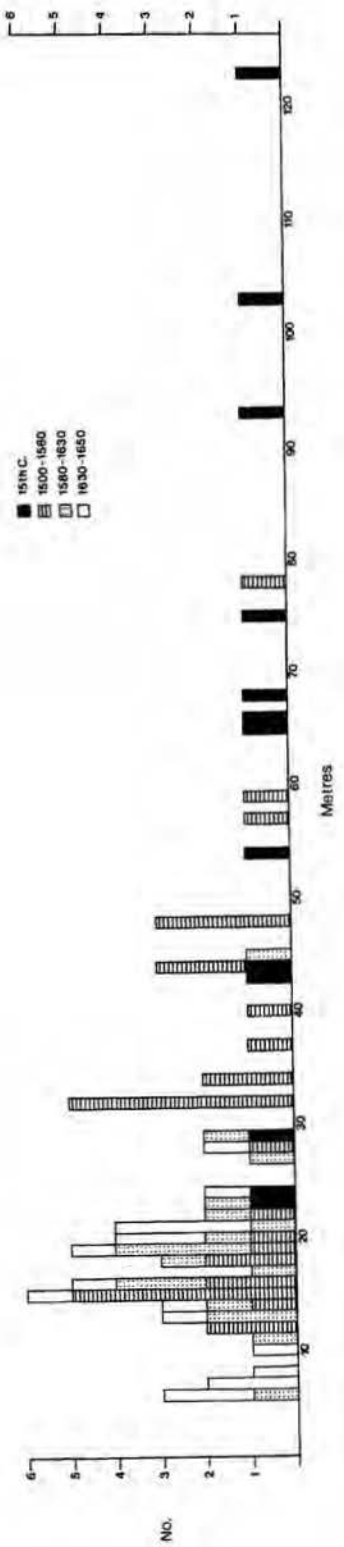


FIGURE 13.32: Longhouse Lengths Through Time.

TABLE 13.2: House Length Samples.

PERIOD	SITE	HOUSE # AND LENGTH*	RANGE	MEAN	REFERENCES
Prehistoric (1400-1500)	Moyer	1-23,2-65,4-93, 5-44,7-68,8-54, 9-24,10-43	23-123	62	N. Wagner et al. 1973
	I. Elliot	1-66,2-75,3-103			W.R. Fitzgerald 1990b
	Coleman	1-123,3-29			R. MacDonald 1986
Pre-Fur Trade (1500-1580)	R.Reid	1-28,2-44,3-15, 4-19,5-20,6-16	12-78	30	W.R. Fitzgerald 1984, 1990b
	MacPherson	1-34,2-40,3-48, 5-57,6-44,7-18, 8-15,10-12,11-15,12-32,14-16, 15-32,16-32,17-78, 18-59			W.R Fitzgerald and Saunders 1988
	Zap (Haynes)	1-48,4-48,5-32, 6-18,7-32,8-34, 9-12			
	Wolfe Creek	2-20,3-12			Foster 1982a, 1990
Historic GBP1 (1500-1580)	Fonger	1-19,2-16,3-27, 5-23,6-18,9-13, 12-13,13-14, 14-11,16-22, 18-19	11-27	18	Warrick 1984a
	Cleveland	1-16			Noble 1972c
GBP2 (1600-1630)	Christian-son	1-6,4-19,4W-21, 5-21,6-45	6-45	22	Noble 1970 W.R. Fitzgerald 1982a
	Thorold	1-20			Noble 1980
GBP3 (1630-1650)	Hood	1-24,2-20,10-15, 11-21,12-7,13-8	6-28	15	Lennox 1984a
	Walker	1-21,2-20,6-6, 10-28,12-16			M. Wright 1981
	Hamilton	1-21,4-19			Lennox 1981
	Bogle I	1-7,4-10,5-13			Lennox 1984b
	Bogle II	1-14,2-6			Lennox 1984b

*: refers to house number assigned by site investigator(s); all measurements are in metres.

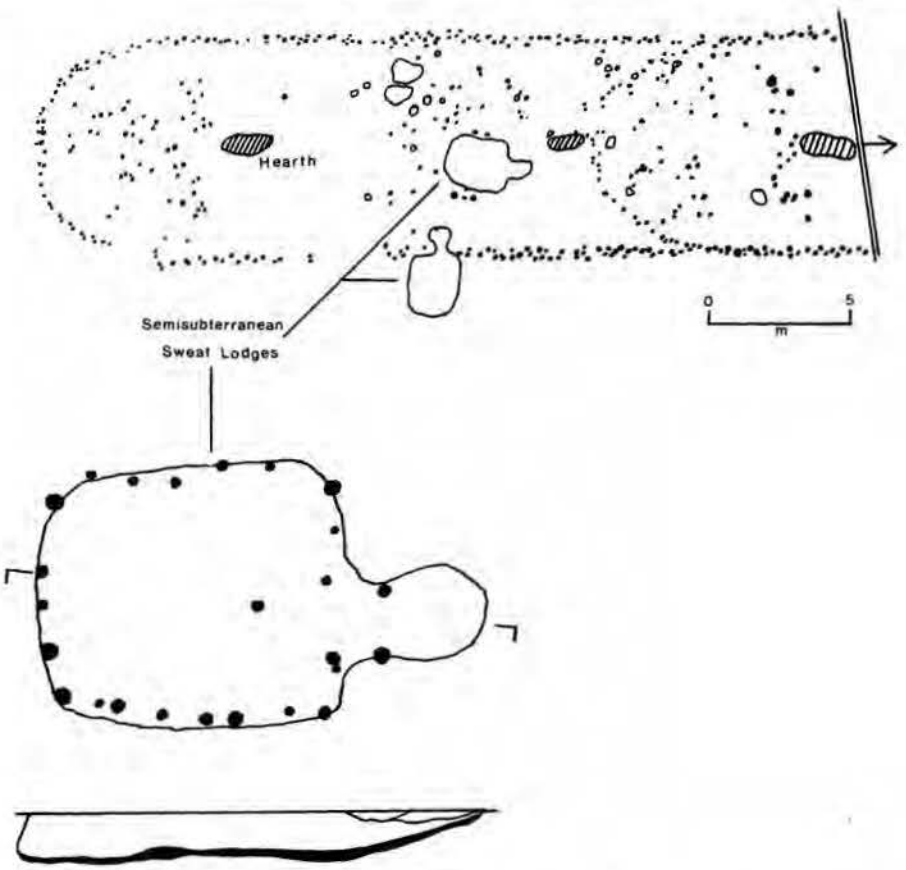


FIGURE 13.33: Fifteenth Century Coleman Site Longhouse End. Note extension and semi-subterranean sweat lodges. Redrawn after R. MacDonald (1986).

A feature that is occasionally found to be associated with Iroquoian longhouses, has been interpreted as sweat lodges or sweat baths.[2] Two varieties have been recorded on Neutral sites. An above-ground form consists of clusters of small posts located along the central corridor where sweat lodges have been temporarily erected and dismantled numerous times (Tyyska 1972). These appear during both the Middle Ontario Iroquoian and Late Prehistoric Neutral periods (Figure 13.29), but are rare in 17th century Neutral houses. A recently identified semi-subterranean form (R. MacDonald 1986, 1988) appears to be more common on Middle Ontario Iroquoian and prehistoric Neutral villages. They occur within or immediately adjacent to houses (Figure 13.33).

Neutral Subsistence Patterns

Archaeological evidence reveals that the Neutral combined hunting, farming, fishing, and gathering subsistence pursuits. The diversity of eco-niches in Neutral territory (lakes, rivers, ponds, streams, swamps, escarpments) in combination with its location along the northern edge of the Carolinian biotic province, provided a diverse and rich array of subsistence resources.

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[2] These lodges were used widely by Native groups. They consisted of small structures in which water was thrown on heated rocks to produce steam and are a functional equivalent of a sauna.

TABLE 13.3: Selected Mammal Frequencies From Neutral Sites.*

PERIOD	SITE	MAMMAL SAMPLE SIZE	SELECTED SPECIES (% of total mammal) SQUIRREL	MUSKRAT	WOODCHUCK	RACCOON	DOG	BEAVER	DEER	BEAR
Prehistoric	Moyer	704	.6	2.7	73.4	.1	2.6	11.5	2.7	3.3
15th Century	Coleman	271	7.7	15.1	26.6		11.8	8.9	2.6	13.3
	I. Elliot	233	24.5	12.0	15.5	.9	3.4	1.7	.9	.9
Pre-Fur Trade	MacPherson	291	5.2	3.1	.3	2.1	.3	5.8	78.4	2.1
16th Century	Raymond Reid	237	2.1		7.6			3.0	59.1	18.6
	Buddy Boers	922	6.2		.3	1.1	.4	3.6	85.8	.9
16th Century GBP 1	Cleveland	4139	1.0	.2	1.4	3.9	7.9	3.3	69.7	3.1
17th Century GBP 2	Christianson	1169	1.4	1.0	2.6	10.9	.2	22.9	50.1	2.3
17th Century	Walker	7626	11.2	.7	1.1	6.6	2.0	3.6	70.9	.6
GBP 3	Hamilton	8249	2.3	1.1	.7	17.9	2.2	3.3	64.9	2.6
	Hood	2150		.1	.4	3.4	.8	10.1	78.7	2.7

*: The percentages were established by only using specimens that had been identified to a particular species and by excluding apparent 19th and 20th century domesticates.

Advances in faunal identification and recovery techniques reveal that a wide range of mammal, bird, fish, reptile, amphibian, and mollusc species were being exploited by Neutral peoples throughout the period under study (Prevec and Noble 1983). Unfortunately, there has not been a comparable intensity in the investigation of floral remains. Those that have been undertaken do, however, indicate a diversity of plant cultivation and collection activities (e.g. Austin 1978; Fecteau 1985; R. MacDonald 1986).

While the range of animal species that were exploited remains virtually unchanged during the 15th, 16th, and 17th centuries, there were dramatic temporal shifts in certain of the mammalian species that were being favored (Table 13.3).

At 15th century sites such as Moyer (Kohls and Gnys n.d.), Coleman (Prevec 1985), and Ivan Elliot (Wilson 1986), smaller species, most notably woodchuck and muskrat, dominate the assemblages. In the avian class, passenger pigeon is consistently popular, and amongst fish species the bottom-feeding catfish and suckers are most common. A variety of turtles is also present. The vast majority of these species could have been obtained in near proximity to the settlements with a minimum of effort.

Remains from early and mid-16th century villages, hamlets, and cabin sites such as Raymond Reid (Riosa 1984), MacPherson (Campbell 1988), Buddy Boers (Prevec 1988e), Windermere, Ronto, and Smallman (Pearce 1983), and the late 16th century Cleveland village (Prevec 1981b), as well as the 17th century Christianson (Prevec 1980), Hamilton (D. Pihl 1977), Hood (Lennox 1984a), Walker (M. Wright 1981), Bogle I, and Bogle II (Lennox

1984b) villages and hamlets, all indicate a dramatic reversal in the exploitation of certain mammals. During the 15th century, white-tailed deer never comprised more than three percent of the identified mammal sample; however, on all 16th and 17th century Neutral sites deer is by far the predominant mammalian species, ranging from a low of 50.1% at Christianson to a high of 85.5% at Buddy Boers. Associated with this increase in deer is a dramatic decrease in the frequency of woodchuck and muskrat. Amongst the other major mammalian species only raccoon exhibits a clear temporal trend in exploitation, increasing significantly during the 16th and 17th centuries. Also, with the onset of the commercial fur trade after A.D. 1580, it might be expected that the frequency of beaver would have dramatically increased, but, with the exception of the Christianson sample, this is not the case. Indeed, certain 15th and early 16th century sites have greater amounts of beaver than sites dating to the fur trade era.

The exploitation of other faunal classes during the 16th and 17th centuries generally does not diverge from the pattern observed at 15th century sites. While passenger pigeon continued to be the most numerous avian species represented, larger birds such as wild turkey, Canada goose, and oldsquaw duck provided increased meat proportions. Fish, reptilian, and mollusc classes continued to be dominated by species available from local small streams and ponds. These include catfish, sucker, a selection of turtles, and bivalves.

It has been hypothesized that this shift to a greater emphasis on deer and raccoon might be due to a period of climatic deterioration, which began during the cooler and unstable Pacific sub-episode (ca. A.D. 1200-1400), and culminated after A.D. 1550 during the "Little Ice Age" (W.R. Fitzgerald and Jamieson 1985). The effect of climatic change on cultural disruption at this time has been postulated for other cultures (Dekin 1972; Finsten 1979), and the Neutral who occupied horticulturally marginal areas should not be expected to have remained unaffected (R. MacDonald 1986:114). However, given the predominant use of deer on earlier, Early and Middle Ontario Iroquoian sites (see Williamson; Dodd et al: this volume), it may be that the lack of deer present on 15th century prehistoric Neutral sites is due to the small sample size of sites from this period with available faunal analyses.

Our knowledge of cultigens and wild plants is dependent on whether these remains happened to have been carbonized, and thus preserved in an archaeological context. Yet, a wide range of domesticated and gathered (wild) plants have been identified despite a paucity of available floral analyses for Neutral sites. The five cultigens (corn, beans, squash, sunflower, and tobacco) have been reported from 15th, 16th, and 17th century sites (Austin 1978; Fecteau 1985:285-286; R. MacDonald 1986:96). Wild fruits (strawberry, brambleberry, sumac, hawthorn, black nightshade, elderberry, plum, cherry, crab apple), nuts (butternut, walnut, acorn), and greens (knotweed, purslane) indicate another extensive food source that tends, unfortunately, to be selectively preserved.

Neutral Mortuary Practices

Historical accounts of Neutral burial practices are limited to a single reference by Jerome Lalement following Brebeuf and Chaumonot's 1640-1641 mission:

> Our Hurons immediately after death carry the bodies to the burying ground and take them away from it only for the feast of the Dead. Those of the Neutral Nation carry the bodies to the burying ground only at the very latest moment possible when decomposition has rendered them insupportable; for this reason, the dead bodies often remain during the entire winter in their cabins; and, having once put them outside upon a scaffold that they may decay, they take away the bones as soon as is possible, and expose them to view, arranged here and there in their cabins, until the feast of the Dead (Thwaites 1896-1901 [21]:199).

Human burials have been documented archaeologically from a variety of locales within and around settlements, the most notable being the cemeteries located outside of the settlement's palisade. However, the interment of individuals within the confines of the village, especially within the longhouse, was also a common occurrence.

Cemeteries

Large cemeteries have been a favourite target of collectors since the 1820s, and written accounts for cemeteries such as Walker (Waugh 1903; Steele 1944; M. Wright 1981), Dwyer (Schoolcraft 1848, 1851; Boyle 1888; R. Smith and Murphy 1939; Ridley 1961), Burke (Ridley 1961), and Daniels (Pringle 1933) provide only general information about the distribution of burials and the nature and arrangement of the individuals that were interred. The thoroughly documented Grimsby cemetery (W. Kenyon 1982), however, provides abundant detail about the nature of Neutral cemeteries for the period before, during and after the period of European-introduced epidemics of A.D. 1634 to 1640. The Grimsby site pattern does not appear to be significantly different than that observed at earlier, short-term, cemeteries such as Shaver Hill (Stothers 1972), Milton Heights (Ferris 1987b) and Tregunno (I. Kenyon 1986; Saunders 1988).

At the Grimsby site, located near the base of the Niagara Escarpment in the town of Grimsby, an area of approximately 30 by 15 metres in size was excavated (W. Kenyon 1982). Over 55 largely undisturbed burial pits were documented from the site, distributed in an oval area aligned east-west. Of these burial pits, 27 contained a single individual while the remaining 28 contained between two and 104 individuals. Four different kinds of burials are represented by the 367 individuals at Grimsby: articulated primary burials; semi-articulated wrapped bundle burials; scattered unwrapped bundle burials; and true bundle or packaged disarticulated secondary burials (W. Kenyon 1982:230-231; Figure 13.34 and 13.35). Many of the interments were furnished with a relatively great abundance of grave goods (W. Kenyon 1982:226).

Based on the estimated dates of bead assemblages from the various features at Grimsby, I. Kenyon and Fox (1982) suggest that this cemetery was in use over a long period of time, extending from Glass Bead Period 2 (ca. A.D. 1615), through to the end of Glass Bead Period 3 (ca. A.D. 1650). I. Kenyon and Fox (1982:13) also point out that the site expanded through time, from a "core area" at the southwest corner of the excavations, outwards to largely Glass Bead Period 3 burials located in the northeast end of the site. This extended use of the Grimsby cemetery is considered atypical by I. Kenyon and Fox (1982:13), comparable perhaps only to the poorly documented Walker village cemetery (Ridley 1961).

Unfortunately, it would be difficult, if not impossible, to test I. Kenyon and Fox's findings on other later-dating Neutral cemeteries, since no other examples have been excavated with the same care as Grimsby. However, the number of interments and the diversity of interment forms which is repeated at other sites, may suggest that this pattern is typical of other 17th century Neutral cemeteries. This range of burial types may be influenced by numerous factors, for example, the length of time between death and cemetery interment, perhaps a function of season of death, as well as the whereabouts of the deceased and next of kin at the time of death. Undoubtedly, social factors also played a role in who was buried together, where they were interred, and at what time of the year this burial occurred.

In pre-epidemic times there is more of a tendency to have single large ossuary (large, multiple burial pit) pits rather than the multiple ones seen at Grimsby. It may have been that the single pits at earlier sites contained the deceased from the duration of the settlement's occupation (Saunders 1988) -- a situation not at variance with the reported Huron practice (see Ramsden: this volume) -- and that each settlement had one of these pits constructed before the village relocation. Peripheral burials of articulated individuals, commonly found surrounding these earlier dated ossuary pits, likely represent more recently deceased, post-ossuary, interments. Since the epidemic era cemeteries can have numerous ossuary pits, these mass interments might have been a more frequent, perhaps even an annual occurrence during this period of increased death (W. Kenyon 1982:231; W.R. Fitzgerald 1990a:226-239).

Turning to the nature of the ossuary pits themselves, occasionally they possess depths as great as 1.8 metres (Schoolcraft 1851:103; M. Wright 1981:117-119) and exhibit unusual construction techniques. One pit at the Walker cemetery had a small sub-floor compartment, sealed with a hard clay cap, which contained the remains of a single individual (M. Wright 1981:117). At the Walker and Dwyer cemeteries, where several large ossuary pits were recorded, single examples of "false floor" construction, where the ossuary pits were divided into separate, vertical

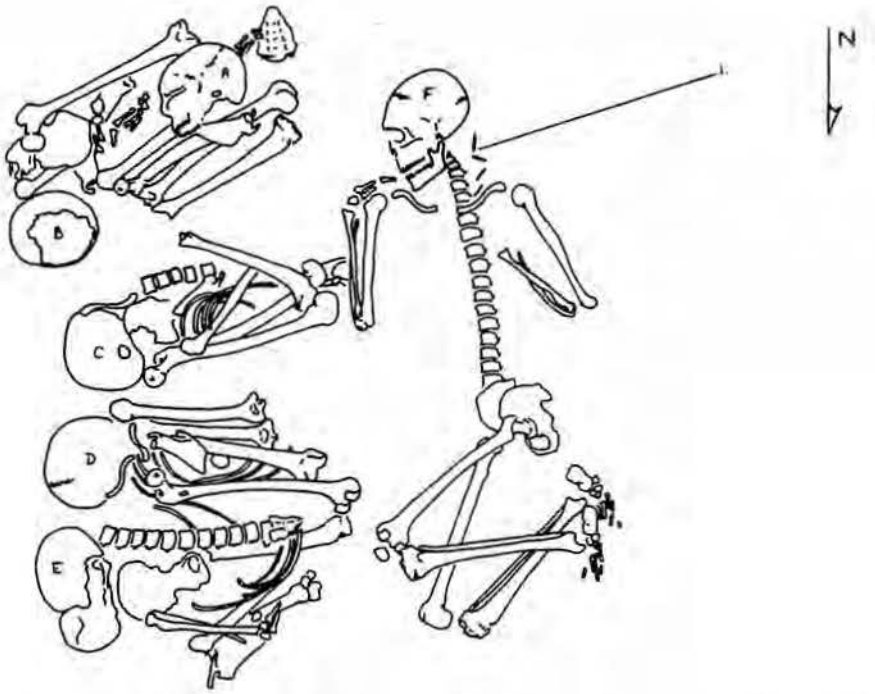

FIGURE 13.34: Grimsby Site Feature 17. A-B: Secondary Bundle Burials; C-E: Semi-Articulated Bundle Burials; F: Loosely Flexed Primary Burial. Courtesy of the Royal Ontario Museum, Toronto.

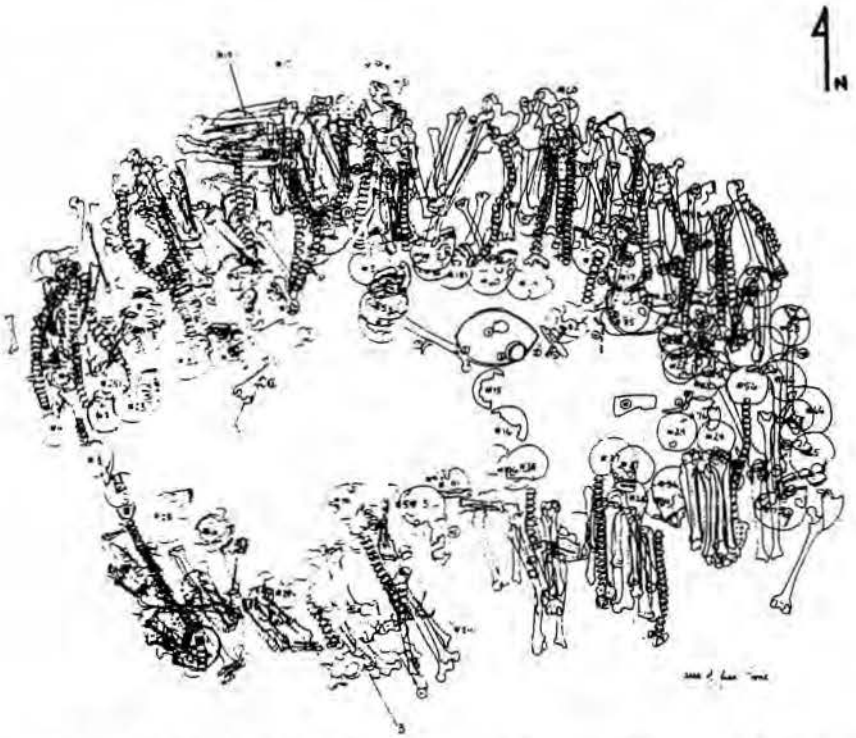

FIGURE 13.35: Grimsby Site Feature 62, An Historic Neutral Ossuary. Courtesy of the Royal Ontario Museum, Toronto.

compartments, were noted (Steele 1944:5-6; R. Smith and Murphy 1939:4). For example, at Dwyer a compact mixture of gravel, ash, and charcoal, with a thickness of some 30 centimeters, divided the pit into upper and lower chambers. A similar example was also recorded at the Orchid site in Fort Erie (Granger 1968; M. White 1966). It has been suggested that these "segregated" ossuary pits may reflect the existence of a ranked society among the Neutral, with "upper class" interments being physically separated from commoners (Noble 1985:141). While this is suggested to help substantiate the theory that the Neutral were a chiefdom, there is no hard archaeological or historical evidence to support the claim that there were differences in status between the individuals interred in the upper and lower parts of the pits. The segregation could reflect other divisions in society, such as the presence of unranked multi-lineage sub-groups or even, continued use of the same pit over time.

Prior to mass reburial in ossuary pits, it appears that individuals were interred in separate graves outside of the village. The closest indication of what a primary cemetery might look like comes from the mid-16th century MacPherson village where a concentration of at least five individual articulated burials was located just outside of the palisade of the village's core. As well, there are surface indicators from unexcavated adjacent areas that this cemetery was more extensive.

There are references to early-to-mid 16th century ossuaries among the Neutral, such as Main (Ridley 1961), but none of these have been investigated in any detail, and it is difficult to ascertain if the later cemetery patterns of the Neutral originate in the prehistoric period.

Longhouse Burials

Human burials are often encountered within longhouses (W.R. Fitzgerald 1979b, 1982a, 1990b; Lennox 1984a; Noble 1980; Saunders 1989; M.Wright 1981). Articulated, and occasionally bundle burials, spanning the age range from late fetal/newborn to adult are represented in all areas of the houses -- in the central corridor, along the bunkline and in the end storage compartments; however, there appears to be a preferred placement according to the individuals' age at death.

At the mid-16th century MacPherson village, 22 in-house burial pits were encountered (Saunders 1989; Figure 13.28). Eight were located within the central corridor. All were infants, seven being less than six months of age. The predominance of graves of the very young in this area of the house might suggest an intentional spatial placement for individuals of this age grade. It is recorded for the Huron that infants who died at less than one or two months of age were buried on and beside paths so that their soul could enter the womb of passing women and be reborn (Thwaites 1896-1901 [10]:273). The Neutral may have had similar beliefs as central corridors of houses, being major thoroughfares, would provide ample opportunity for these souls to be reborn.

While the very young predominate in the central corridors, older individuals tend to be buried toward the sides of the house. For example, six of the eleven MacPherson individuals in this area are adults, and with one exception the others are greater than two years of age. Only two graves were encountered in the end compartments of MacPherson houses, and both of these were adults.

Burials Outside of Longhouses

Since little archaeological attention is generally paid to open areas within villages, the frequency of burials in these areas might be under-represented. However, extensive clearing at MacPherson uncovered only two instances while none were uncovered at Hood, suggesting that burial in these areas was rarely undertaken. Both interments at MacPherson were adults, one being a disarticulated bundle burial.

Non-Ossuary Burials Outside of Settlements

Occasionally encountered outside of villages are isolated individuals. Two examples have been reported from Neutral sites -- a child from the Christianson site (W.R. Fitzgerald 1982a) and an adult male from MacPherson (Saunders 1989). Perhaps their infrequency is a result of limited exterior investigations.

Notable and unique is the recovery of a small group of individual burials at the Van Oordt site near Kitchener. These graves, not directly associated with any nearby habitation site, contained the dismembered remains of 9-13 adult males, some with projectile points embedded in their bones, and are thought to represent an enemy war party, surprised, attacked and subsequently slain by the Prehistoric Neutral (Molto et al. 1986).

Scattered Human Remains

Pieces of human bone occasionally turn up during village and midden excavations and this might be expected given the location of primary and scaffold burials in and around village sites and given the reburial practices followed by the Neutral. Quite a different matter though are over 500 bones, mostly of adults, many of which show evidence of scorching, cutting and boiling, found in nearly every part of the prehistoric Lawson site during Wintemberg's and subsequent investigations. Wintemberg attributes some of these remains to Fire Nation captives who were burnt at the stake and possibly eaten (Wintemberg 1939:58).

Thoughts for Future Research

Archaeological research, and hence our knowledge of the Neutral, has progressed admirably, largely due to the contributions of such pioneers as Boyle, Houghton, Wintemberg, Ridley, White, and Noble. Settlement and material culture studies have produced a picture of Neutral cultural development from the 15th century through to their demise as a distinctive cultural entity by A.D. 1650. Nonetheless there remains a great deal to be understood.

The 15th century remains a particularly enigmatic era. Long longhouses, a peculiar subsistence base, and a distinctive ceramic assemblage make it distinctive from both its Middle Ontario Iroquoian forebears and the later, 16th and 17th century Neutral. If more attention was focussed on this era throughout Neutral territory a greater understanding of the Middle/Late Ontario Iroquoian transitional period might evolve.

On the other hand, illicit activities, avocational endeavours, academic research, and salvage projects have resulted in an enormous reservoir of information for the subsequent 16th and 17th centuries. The notion that there are distinct Neutral tribal units has existed since the 1910's (Houghton n.d.a, n.d.b; I. Kenyon 1972; Noble 1984) but comparisons are still often made as if the Neutral were one homogeneous cultural entity. The cultural variability and spatial separation of the archaeologically-defined site clusters east of the Grand River (W.R. Fitzgerald 1990a:252-404), as well as of the purely prehistoric sites to the west, strongly suggest that the Neutral should be investigated, not as a homogeneous cultural entity, but as a collection of individual, territorial communities or tribes, each with its own distinctive identity. The tribal members of the Five Nations Iroquois have historically and archaeologically been considered and studied as separate entities, and no longer should the tribes of the Neutral confederacy be considered as indistinguishable from one another.

Acknowledgements

We would like to extend many thanks to our friends and colleagues who have shared their work and experiences and who have shared in the site excavations and reporting of their data. We would especially like to thank Bill Noble, Ian Kenyon and Bill Fox who have been most encouraging and insightful through their own contributions. We would also like to thank the editor and reviewers for their constructive comments and patience, the Dept. of New World Archaeology, Royal Ontario Museum, for providing several plates and drawings, and Nick Adams for producing some of the artifact drawings. We apologize for any shortcomings, unreferenced ideas, or overlooked sources. The amount of information on the Neutral is tremendous and if nothing else, we hope to have provided an introduction to this work useful to the student and the professional.

CHAPTER 14

THE ODAWA

William A. Fox

Introduction

When the first French adventurers traversed the Canadian Shield rivers and lakes in what is now southern Ontario, they encountered bands of hunters and gatherers who spoke Algonquian languages which differed markedly from those of the Iroquoian peoples to the south. These Algonquians practiced some marginal horticulture, however, their subsistence and settlement patterns varied little from those of their ancient forebearers. Early seventeenth century French documents have recorded the names of some of these Algonquian bands (Heindreich 1988; Fox 1989a; see Figure 14.1 & 15.1). Groups such as the Kichesipirini and Kinouchepirini occupied the Ottawa River valley and the Nipihsirini claimed Lake Nipissing as their home. The Atchougue and Ouasouarini were based near Pointe au Baril and Parry Sound, respectively (Figures 14.1 & 14.2). Several of the most westerly of the southern Ontario Algonquian bands were members of the Odawa ("Ottawa") tribe, known to Samuel de Champlain as the Cheveux relevés or "standing hairs." Mooney and Hewitt (1907) assert that the name Odawa derives from the Algonquian term adawe "to trade, to buy and sell," an activity reflected in Champlain's 1632 journal entry describing these peoples:

The Cheveux relevés are Indians who wear no breech-cloths and go naked, except that in winter they clothe themselves in fur robes, which they take off when leaving their homes to go about the country. They are great hunters, fishermen and rovers: cultivate the land and sow Indian corn: dry blueberries and raspberries, in which they make a great trade with other tribes, taking in exchange peltries, wampum, nets and other commodities. Some of them pierce their nostrils, and therein place charms. They gash their bodies in lines, thereto applying charcoal and other colouring matters. They have very straight hair, which they grease and paint with red, as they do also their faces.

(Samuel de Champlain 1632)

Historic Location

The first historic record of the Odawa resulted from a meeting between Champlain and a group of three hundred men assembled at the mouth of the French River on the north shore of Georgian Bay in the fall of 1615 (Biggar 1922-1936[3]:44). As Waisberg (1977:33) notes, the response of these men (painted and wearing roaches - thus, "high hair") to Champlain's question concerning the reason for their congregation is the initial documented instance of Ontario Native humour. They told Champlain that they were blueberry picking.

Champlain next encountered these people during his February 1616 snowshoe tour west from the Huron village of Carhagouha:

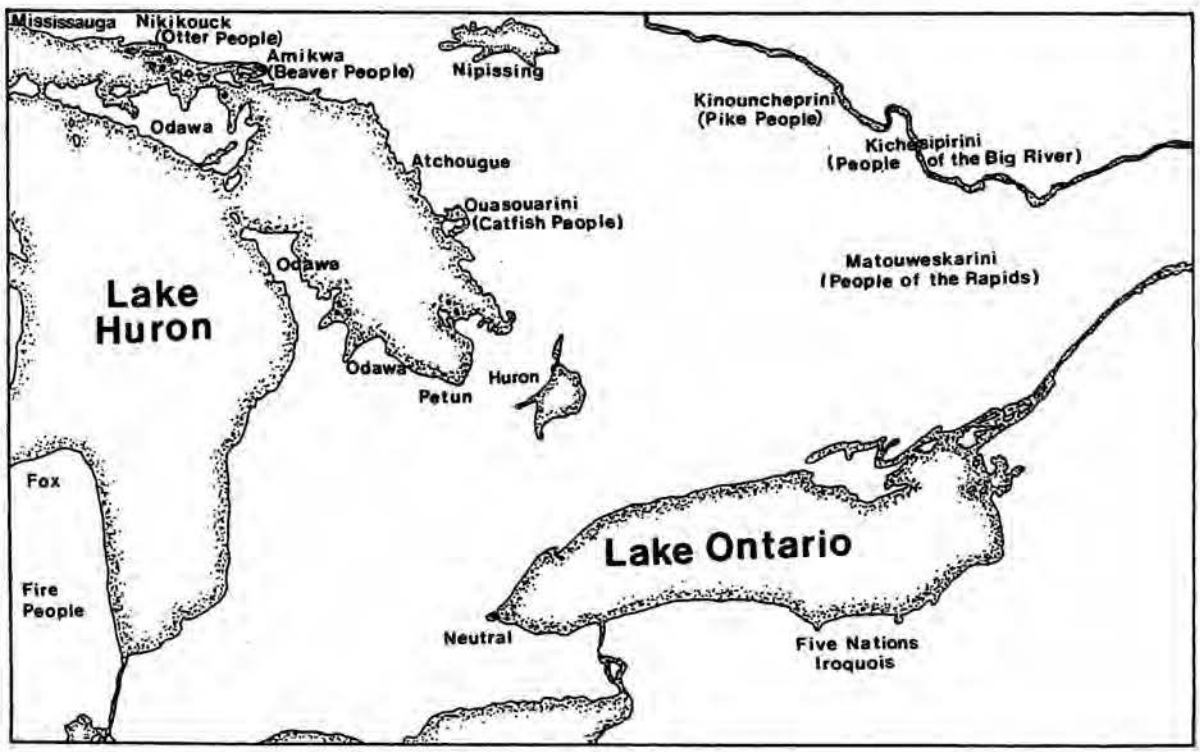

FIGURE 14.1: Northern Algonquian Band Locations in the Early Seventeenth Century.

After visiting these people [Petun] we set out from that place and went to a tribe of savages that we named Cheveux relevés.

(Champlain 1619)

Champlain observed upon arriving among these people that they were great people for feasts and received him very kindly. The exact location of this Odawa settlement has been debated for some time; however, Garrad (1970) has proposed, based on cartographic and documentary evidence, that it was situated in the Craigleith vicinity (Figure 14.2). W. R. Fitzgerald's (1979a) survey between Owen Sound and the Beaver valley west of Craigleath produced no evidence of such a settlement, lending support to Garrad's hypothesis. The most westerly village of the time is the Haney-Cook site which has been suggested as the location of the Cheveux relevés Champlain visited in 1616 (Fox 1985c).

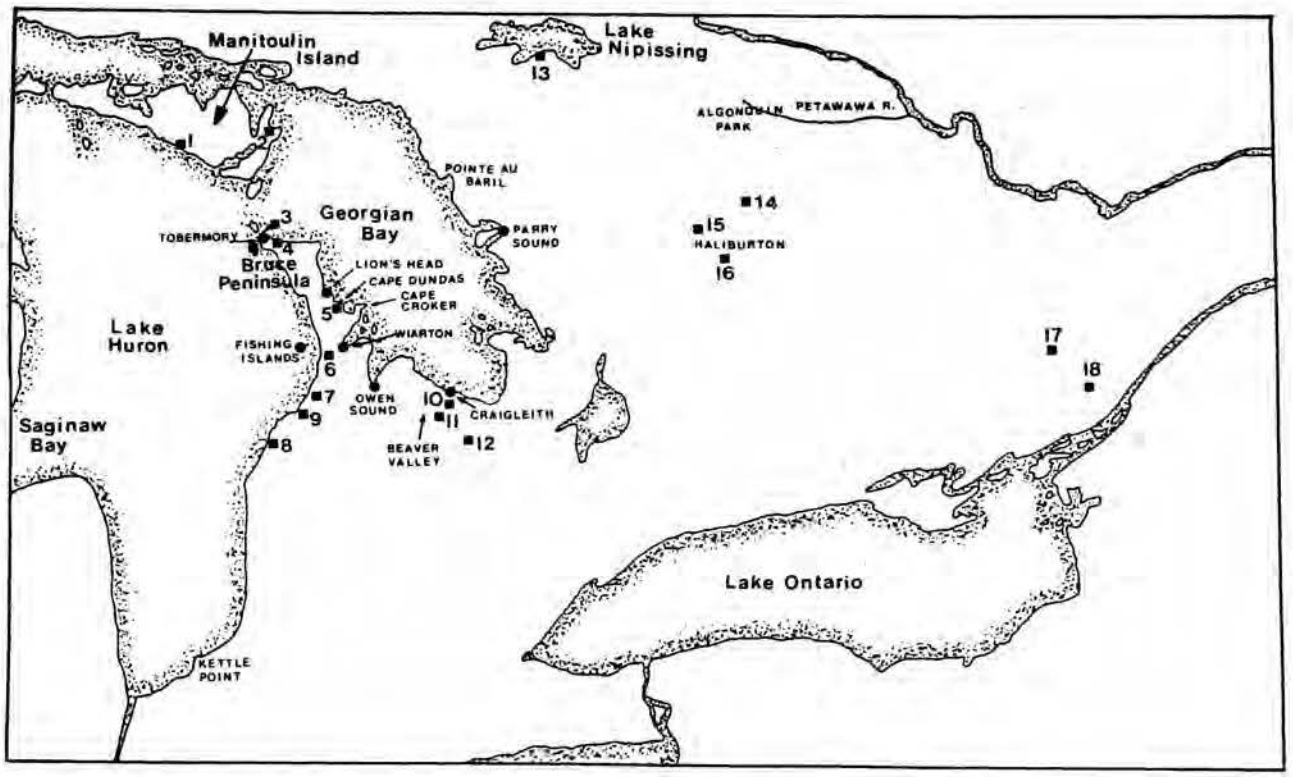

FIGURE 14.2: Location of Archaeological Sites Referred to in the Text. 1: Providence Bay; 2: Shawana; 3: Glen; 4: Cripps; 5: Hunter's Point; 6: Mason; 7: Hunter; 8: Inverhuron-Lucas; 9: Nodwell; 10: Plater-Fleming; 11: Haney-Cook; 12: Hamilton-Lougheed; 13: Frank Bay; 14: Rock Lake; 15: Kawagama; 16: Robinson; 17: Wyght; 18: Jackson's Point.

Rageneau's Jesuit Relation of 1648 indicates that at least three Odawa regional groups or bands were recognized by that time, the Nigouaouichirinik (Sable-sand), Outaousinagouek (Sinago-black squirrel) and Kichkagoneiak (Kiskakon-bear), and he also mentions the Ontaanak (a general Huron term for "foreign speakers" - Steckley 1990). Waisberg (1977:29) has suggested that the Rasaouakoueton noted during Nicolet's 1634 visit to Lake Michigan are the Nassauketon band (people of the fork), or a fourth Odawa band mentioned by late seventeenth century chroniclers such as Cadillac. Extant maps of the period provide no information concerning the location of their base village settlements; however, the ca. 1641 Bourdon (Taunton) map illustrates the Cheveux relevés on Manitoulin Island (Heidenreich 1988) and Bressani's 1657 map inset locates the Ondatauauat (Odawa) in the northern Bruce Peninsula (Heidenrich 1966: Figure 1; see Figure 14.3). Finally, a brief observation by Jesuit Father Pijart suggests that some Odawa continued to reside in villages among the Petun:

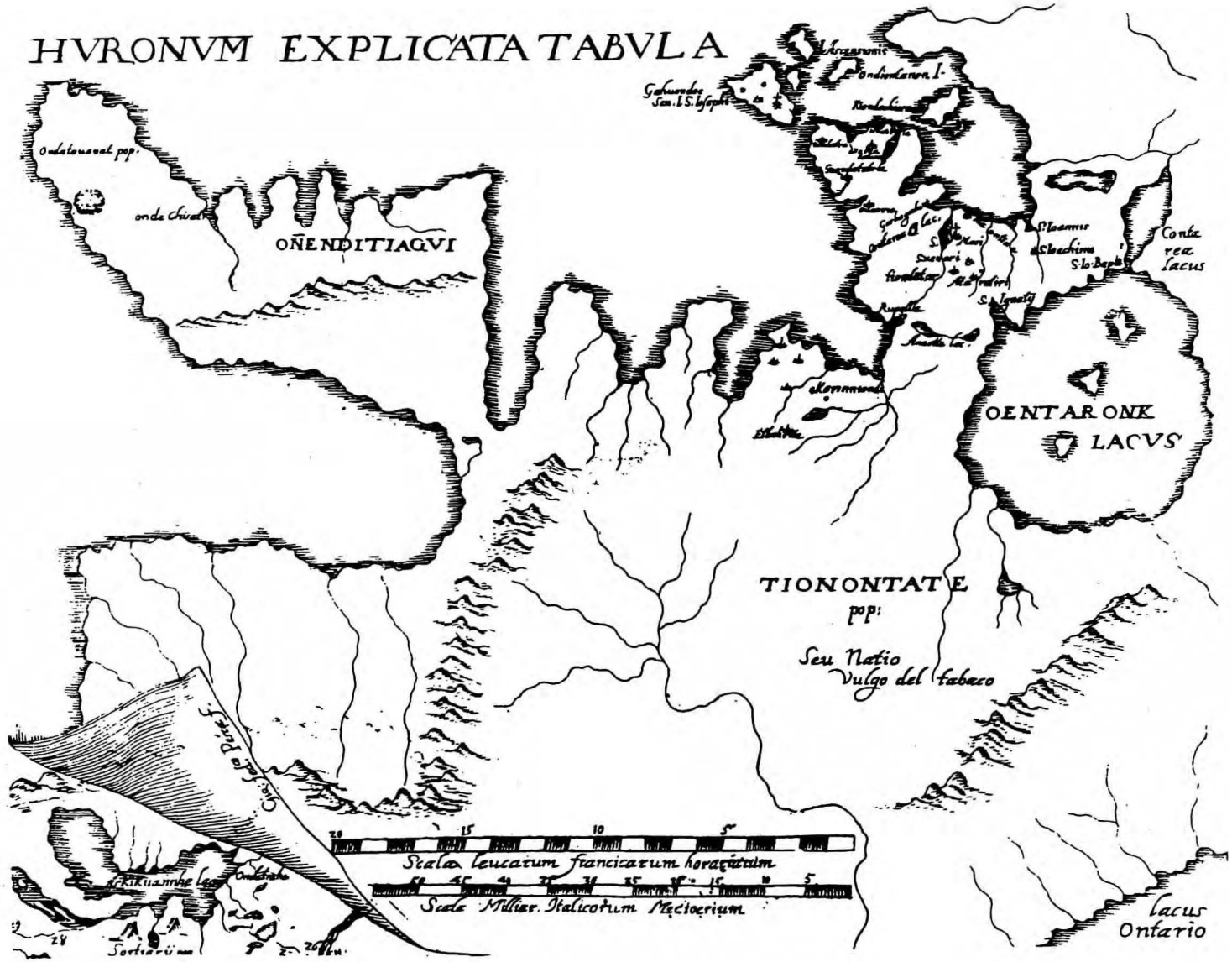

FIGURE 14.3: Inset to the 1657 Bressani Map. Details the Wiarton Portage that created Onenditiagui ("the peninsula cut-off").

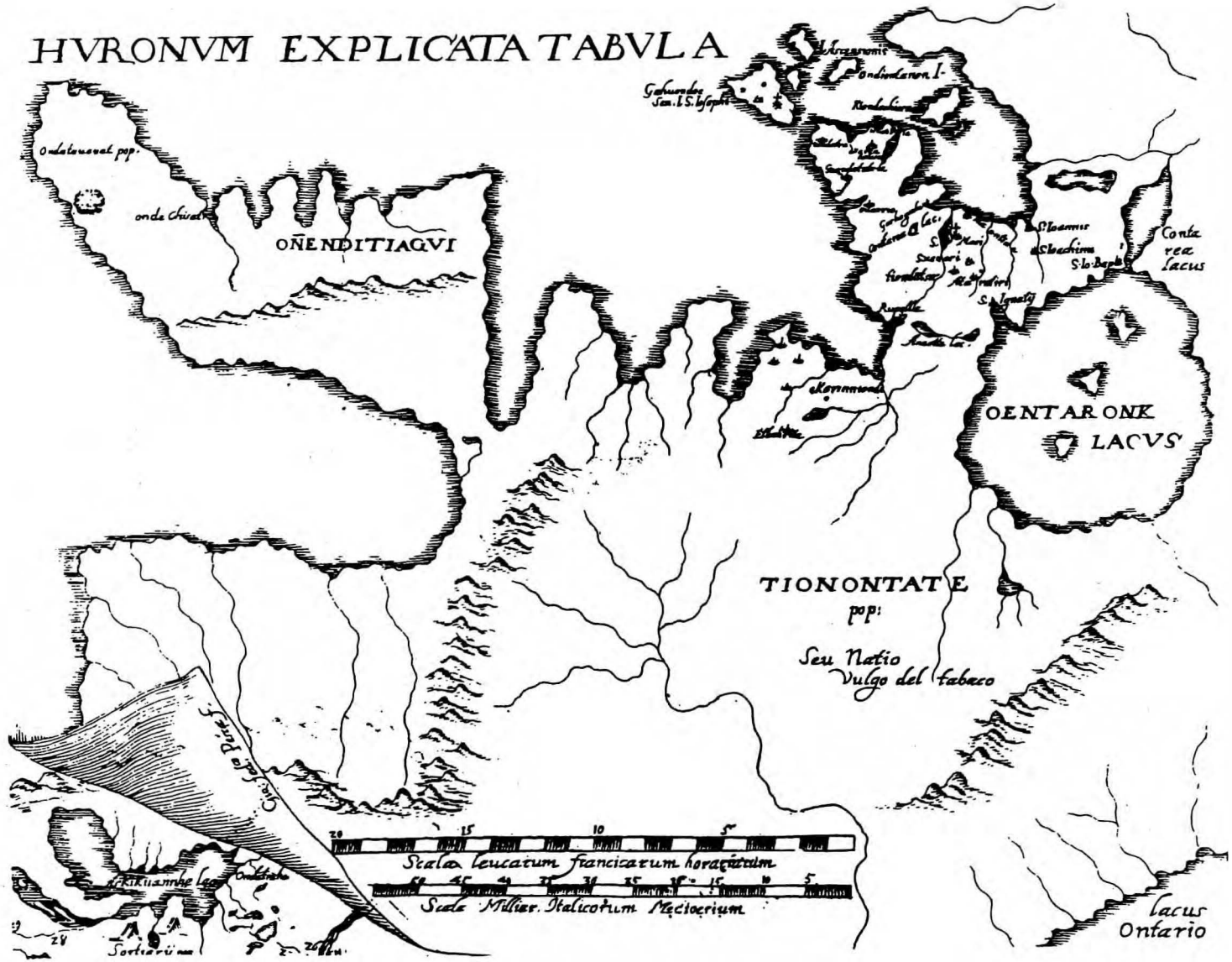

FIGURE 14.3: Inset to the 1657 Bressani Map. Details the Wiarton Portage that created Onenditiagui ("the peninsula cut-off").

FIGURE 14.4: Vessel Found Near Wiarton ("under a cliff of limestone formation, upwards of one hundred feet high and within a few feet of Colpoy's Bay" [Abbott 1881]).

I have been on a Mission to the tobacco Nation [Petun]; I found two villages where Algonquin was spoken, in one of which the men go entirely nude.

(Father Pijart 1640)

In summary, the sporadic seventeenth century documentation relating to the A.D. 1650 (pre-Iroquois dispersal) location of the Odawa definitely places them on the Bruce Peninsula, as well as on Manitoulin Island and along Lake Michigan. The observations of Champlain and Pijart also strongly suggest that some Odawa were settled in villages near the south shore of Georgian Bay among the Petun.

History of Archaeological Research

The earliest references to artifacts which would now be construed as Odawa can be found in Abbott (1881:173), who illustrates a complete ceramic vessel from beneath a cliff north of Wiarton (see Figures 14.2 and 14.4) and Boyle's (1904:55) report on the discovery of a red slate owl effigy pipe in the Lion's Head vicinity (Fox 1985c).

Tom Lee from the National Museum, the pioneering professional archaeologist in Bruce County, identified a number of Late Woodland camps which he described as Petun (T. Lee 1951b, 1952), presumably based on the presence of Huron/Petun Iroquoian ceramics on these sites and the proximity of the Petun nation to the east.

Most of T. Lee's sites would now be considered Odawa, with the possible exception of the Nodwell village (Figure 14.2). The latter is anomalous in that it is as yet the only palisaded village of longhouses documented in the region and may represent "the only known Iroquois village in Bruce County" (J. Wright 1974:303).

During the 1960's sporadic artifact discoveries were reported on the Bruce Peninsula and in the adjacent waters of Georgian Bay (Pennington 1967); however, it was left to one of Tom Lee's former student assistants to publish the first report identifying an Odawa campsite in Bruce County (J. Wright 1981). His 1976 and 1978 Georgian Bay islands surveys located Odawa encampments on Cove, Flowerpot, Bears Rump, Club and Fitzwilliam Islands (J. Wright 1976, 1979a). An earlier Niagara escarpment survey by Ministry of Natural Resources archaeologists had identified Late Woodland campsites in Grey and Bruce Counties, including cobble beach "Puckasaw Pits" (see below) near the tip of the Bruce Peninsula (Hamalainen et al. 1973). Similar pits were noted by the writer in 1977 on one of the Fishing Islands along the Huron shore of the Bruce Peninsula (Fox 1977) and more have been documented during the 1988 survey of the Bruce Peninsula/Fathom Five National Parks (B. Ross and Dunlop 1989). In 1977 the Mason site was identified along the historic Wiarton portage (Bowman 1975) across the Bruce Peninsula (Fox 1977). The former landowner had recovered a French iron trade axe from a field beside Boat Lake (see Figure 14.2).

While he did not identify Champlain's Cheveux relevés village to the west of the Petun, W. R. Fitzgerald's (1979) Grey County survey in 1978 did provide valuable new information on previously documented and undocumented Late Woodland camps, hamlets and artifact findspots. All or most of these are probably Odawa in affiliation. The writer's Bruce Peninsula survey activities (Fox 1986f, 1987b), Cripps site excavations at Dunk's Bay (Fox 1987b) and Hunter site excavations on the Saugeen Reserve (Fox 1989c), have expanded our understanding of Odawa settlement patterns and subsistence activities. Bruce County Board of Education excavations over two summers at the Mason site on Boat Lake (Molnar 1989, 1990) and the Canadian Parks Service survey of the Bruce Peninsula National Park (B. Ross and Dunlop 1989), have provided some of the most recent data concerning the Bruce County Odawa occupation. Further east, an archaeological assessment project on the Plater-Fleming village (Pearce 1989) has produced some limited community pattern data for what may well have been one of Pijart's (1898:125) Algonquian villages (Fox 1985c; Garrad 1989). Finally, a two year salvage excavation at the Hunter's Point site on Hope Bay was initiated in 1990 by J. Molnar and will provide the first substantial information on the mid-seventeenth century Bruce Peninsula Odawa.

To the north, on Manitoulin Island, four seasons of excavation on the Providence Bay site have yielded extensive insights into early seventeenth century Odawa lifeways on a large base village (Conway 1987). Conway (1989b) also excavated in 1988 on the smaller Shawana site, a fall hunting and fishing camp (Figure 14.2).

Material Culture

Ceramics

Octanacks [Odawa]...comes [from the Straits of Mackinac] to the furthest part of the lake of the stinkings [Winnebagos], there to have [obtained by trade] light earthen pots,...

(Radisson ca.1658)

Ceramics have traditionally overshadowed all other artifact classes as an analytical tool for the development of southern Ontario Late Woodland culture historical constructs. This has been so particularly among Iroquoianists (P. Ramsden 1977a), but has been applied to Algonquian sites in the Algonquin Park vicinity (Mitchell 1975) and farther afield in northern Ontario, where vessel styles have been interpreted as evidence of prehistoric marriage systems (J. Wright 1969:50).

The identification of ethnicity based solely on ceramics is a Northeastern archaeological tradition still in its "death throes." One of Ontario's most perceptive avocational archaeologists, Frank Ridley, once ruefully observed in connection with his definitive Nipissing Algonquian collection from the Frank Bay site (Ridley 1954), that he had gone to Lake Nipissing looking for a Nipissing site but had found instead a Huron one (F. Ridley: personal communication, 1970). The lithics and other archaeological evidence such as dog burials which are characteristic of northern Algonquian ritual (Brizinski 1980; see below), indicate otherwise (see Figure 14.2).

Late Prehistoric and Historic Huron ceramics have been recorded from habitation and grave sites across the southern Ontario Canadian Shield for close to a century (Boyle 1892; Kidd 1948; Ridley 1954; Mitchell et al. 1970; Hurley and Kenyon 1970; Sweetman 1970; W. Ross 1975; Gould 1980; Ballantine 1985; see Figure 14.2). Indeed, such ceramics are documented far to the north in the Canadian Shield interior of Ontario (J. Wright 1969) and Quebec (Ribes and Klimov 1974), on sites of undoubted Northern Algonquian affiliation. William Ross has observed in regard to Haliburton district sites that they were occupied by "certain Algonquians whose only pottery and pipes are Huron-Petun types" (W. Ross 1975:3).

Further south, in the Frontenac Axis of the Canadian Shield, St. Lawrence Iroquoian ceramics have also been documented (Beeman 1892; Morrison 1975, 1977; P. Wright 1980; see Figure 14.2) and there has been a tendency to equate these and earlier Iroquoian wares with an Iroquoian hunting occupation of the area (P. Wright 1980:69). Watson (1980) goes further and suggests that the limited evidence for a post-A.D. 1000 occupation of the Rideau Valley vicinity is due to pressure on local Algonquian peoples exerted by the expanding St. Lawrence Iroquoian population to the south.

It is significant that the northern movement of Iroquoian-speaking agriculturalists into the southern Georgian Bay littoral during the fourteenth century (see Ramsden: this volume) is reflected in a substantial increase of Iroquoian ceramics on Lake Huron basin Algonquian camps such as those at Dunk's Bay near Tobermory (Fox 1987b; see Figure 14.5), and further west on sites in the Lake Superior basin (Foster and Ross 1988). It is probable that ceramic vessels reflecting Huron/Petun Iroquoian styles were manufactured by adjacent Algonquian groups (J. Wright 1981; Figure 14.6); however, the decorative, paste and technical attributes of the majority of Huron/Petun style ceramics on northern Algonquian sites suggests that many Iroquoian vessels were acquired in exchange by Odawa groups (see Figure 14.7). One such vessel has been discovered as far away as Lake Shebandowan, west of Thunder Bay (William Ross: personal communication, 1988).

From the Providence Bay village, Conway (1987) has identified ceramics related in style not only to the Huron/Petun, but also to western Juntunen and Algoma wares. The Juntunen ceramic sequence relates to an Algonquian Late Woodland occupation of northern Michigan (McPherron 1967). Late prehistoric Algoma wares (Conway 1987:26) represent another Algonquian ceramic tradition in the same area. The writer (Fox 1987b) has reported ceramics similar to these Lake Michigan basin wares at Dunk's Bay (Figure 14.8), while W. Kenyon (1959) recovered several ceramic rims identical to those characteristic of the Rifle River earthwork sites of lower Michigan from the Inverhuron-Lucas campsite in Bruce County (see Figure 14.2). Indeed if one attribute characterizes Odawa ceramic assemblages, it is the variety of wares found at various settlements. Ceramic pipes, while rare, also reflect strong Iroquoian stylistic influence (Figure 14.9).

Lithics

They go in bands into many regions and countries as far off as 400 leagues or more (so they told me), and there they trade with their goods and exchange them for furs, pigments, wampum ["pourcelaines"] and other rubbish ["fatras"-jumble].

(Sagard 1623)

Lithic tool kits from Bruce and Grey County sites are dominated, not surprisingly, by locally available Silurian Fossil Hill and Amabel Formation cherts (Hamalainen et al. 1973; Fox 1979c). These include Collingwood chert from the Beaver Valley (Storck and von Bitter 1981; Kirby 1982; Eley and von Bitter 1989), as well as Bruce chert from the Bruce Peninsula and Wike chert from the western Georgian Bay islands. Another popular chert source found on Odawa sites is Kettle Point chert from the southern Lake Huron basin (Fox 1979d; Janusas 1984). Archaeological evidence also indicates the importance of sources in Michigan at Saginaw Bay, Traverse Bay and the upper peninsula (Figure 14.10). The historically documented maritime orientation of the Odawa is reflected in the shoreline situation of their favoured Kettle Point, Bayport, Wike, Manitoulin, Detour and Norwood chert sources. Indeed, the location of several lithic procurement areas in and adjacent to Central Algonquian territory has been pro-

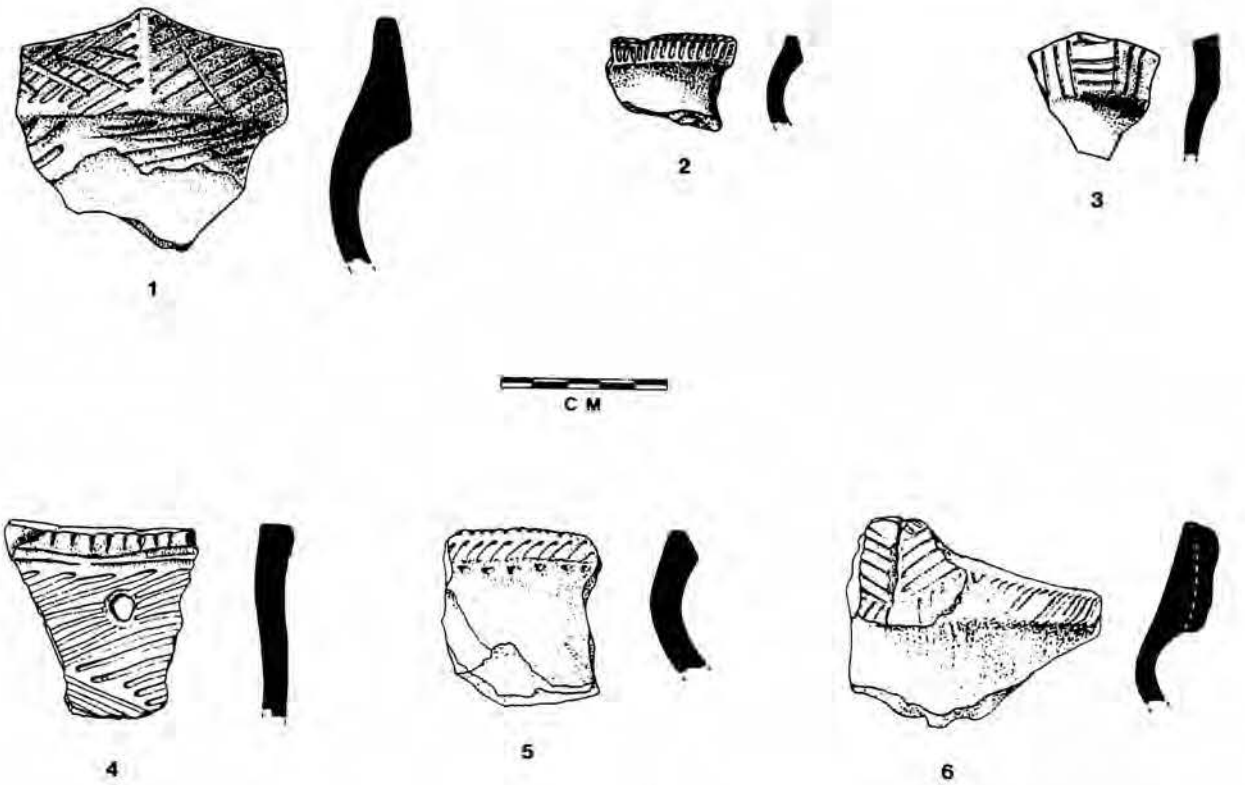

FIGURE 14.5: Huron/Petun Ceramic Rims from Dunk's Bay. 1: Warminster Crossed Rim, With Classic Pointed Castellation; 2: Sidey Notched Type Rim; 3: Crude Lawson Incised Rim Castellation; 4: High Collared Vessel Rim With Mend Hole; 5: Sidey Notched Type Variant Rim; 6: Huron Incised Grooved Castellation.

posed as an explanation (Fox 1985c) for the otherwise curious alliance of the Odawa and Neutral Iroquois against the Central Algonquian Fire Nation (Biggar 1922-1936[3]:97).

Chipped stone tools consist of a range of edge retouched chert flake tools, including triangular projectile points and hide scrapers. Biface tools are scarce, unlike Petun assemblages (Fox 1986e). Quartz and quartzite were utilized regularly for small flake tool production. Cobbles of slate and greywacke were percussion flaked to produce the spall knives commonly recovered from fishing camps. Limestone cobbles were notched as netsinkers. Rough stone tools include greywacke cobble hammerstones, as well as sandstone slab whetstones and metates. Ground stone adzes and axes are rare tool forms, as is ornamental ground stone on most sites. Nevertheless, it is possible that Odawa groups wintering among the Petun were the craftsmen producing a range of red siltstone beads and pendants for exchange (see also Lennox and Fitzgerald: this volume). Much of the red siltstone utilized for the production of these stone beads commonly found on Petun, Huron and Neutral Iroquois villages dating between A.D. 1620 and 1650 appear to have derived from secondary (cobble) deposits along the north shore of Lake Huron and on Manitoulin Island, in particular (Fox 1980g:90). A ground slate heron(?) effigy pipe from the Adams collection in the St. Edmunds Township Museum in Tobermory is typical of Iroquoian forms to the southeast (Figure 14.11-2), as is the red slate owl effigy specimen reported by Boyle from the Lion's Head vicinity.

FIGURE 14.6: Iroquoian Style Rim on an Algonquian Vessel from the Glen Site.

Other Artifacts

Bone, antler and shell artifacts are not common, in part due to the slightly acidic nature of some soils developed on Bruce County sand deposits. An ash midden deposit on the seventeenth century Cripps campsite produced half of a center hole netting (?) needle, a discoidal marine shell bead and a tubular bird bone bead (Prevec 1988c), while a unilateral barbed antler harpoon was recovered nearby on Dunk's Bay (see Figure 14.11-1). Conway (1987) reports tubular bone beads and a tear-drop shaped marine shell pendant derived from his more extensive excavations on the Providence Bay site.

Native copper artifacts have been recorded from Bruce and Grey County sites, including Dunk's Bay (Fox 1987b); however, the only specimens recovered to date from a definite proto-historic or historic Odawa context in those counties are two pieces excavated from the Glen site (J. Wright 1981). To the north, recent trace element analysis of eight copper samples from the early seventeenth century Providence Bay site on Manitoulin Island identified seven as Native copper -- a surprisingly high percentage for a village of this period (Ronald Hancock: personal communication). There can be no doubt that the Odawa played a part in the transportation of copper east from the Lake Superior deposits and the country of "the Coppermines" (Wrong 1939:9).

Early seventeenth century European trade goods have been reported from campsites and as isolated finds across northern Bruce and Grey Counties (W.R. Fitzgerald 1979a; MacLeod 1979:4). Iron axes were most commonly discovered following land clearance, but are rarely found in any abundance outside of Collingwood Township. Other smaller metal goods do not appear to have been noticed by the local farming community. Brass kettle scrap has been recovered from the Mason site (Fox 1977; Molnar 1990), while excavations on the Glen site produced two fragments of cut brass and a reworked iron spike (J. Wright 1981) as well as a glass trade bead (Fox and

FIGURE 14.7: Sidey Notched Type Petun Vessel Discovered Under a Boulder Near Dunk's Bay. Note the mend holes adjacent to a crack in the vessel body.

Kenyon 1988). A tiny piece of copper and an iron nail have been excavated from the Cripps camp, along with two cobalt blue Glass Bead Period 2 beads (Fox 1987b; see Lennox and Fitzgerald: this volume). The only firm evidence for a post-A.D. 1620 occupation on the Bruce Peninsula at present consists of a tubular red glass Period 3b bead excavated from the Mason camp in 1987 (Molnar 1989) and the Glass Bead Period 3 European goods recovered during the 1990 excavations at the Hunter's Point site (J. Molnar: personal communication).

To the east in Grey County, seventeenth century villages which may well be Odawa, such as the Haney-Cook and Plater-Fleming sites, have produced the usual range of metal and glass trade goods found on adjacent contemporary Petun villages.

Settlement and Subsistence

Habitation Sites

Identified Odawa habitation sites are usually small camps located adjacent to Georgian Bay and Lake Huron (J. Wright 1981), or situated on portage routes such as that across the southern Bruce Peninsula (Bowman 1975; Molnar 1989, 1990). Preferred sites adjacent to fish spawning grounds or on major travel routes were occupied repeatedly -- some, such as Dunk's Bay, for over a millenium (Fox 1987b). Small scale excavations to date have hindered our ability to estimate base village size, although the early seventeenth century occupation at Providence Bay covers

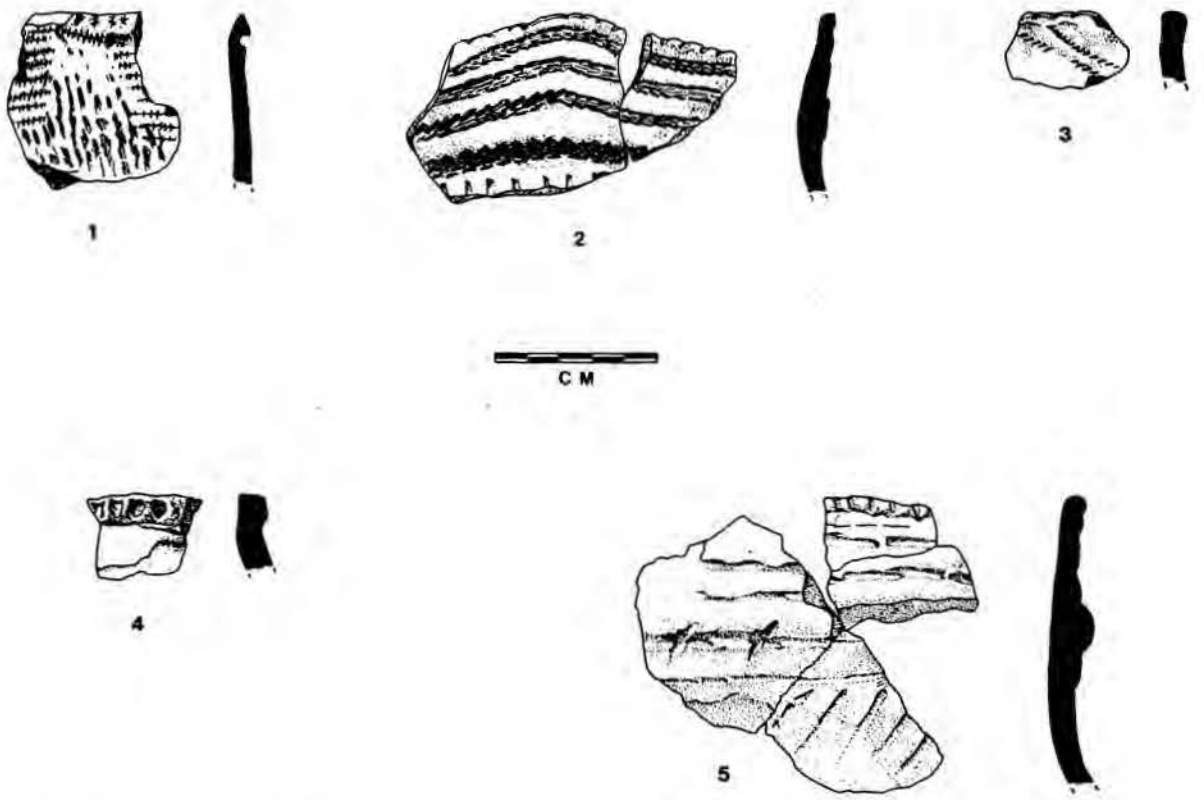

FIGURE 14.8: Non-Iroquoian Ceramic Rims from Dunk's Bay. 1: Mackinac-like Exterior Punctated Vessel Rim; 2: Juntunen Drag and Jab Castellation; 3: Cord-Impressed Rim Sherd; 4: Moccasin Bluff Plain Modified Lip Rim Sherd; 5: Interrupted Linear Juntunen-like Vessel Rim.

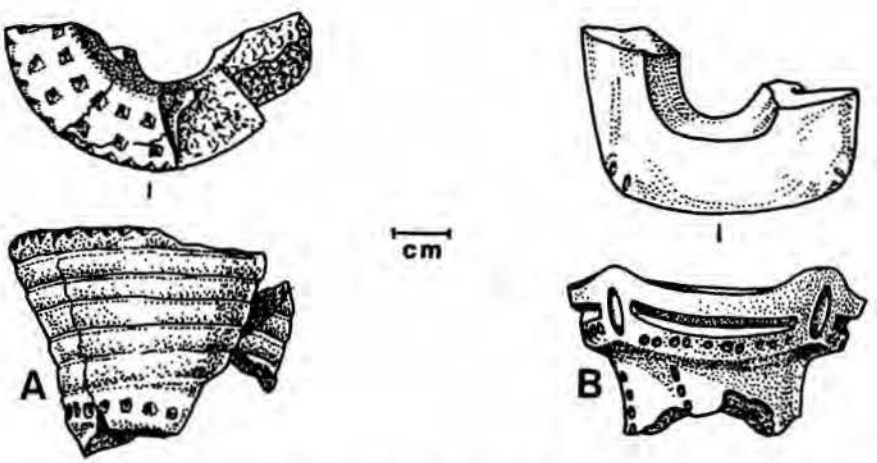

FIGURE 14.9: Ceramic Pipe Bowls from Dunk's Bay. A: Ringed Trumpet Variant; B: Coronet Variant.

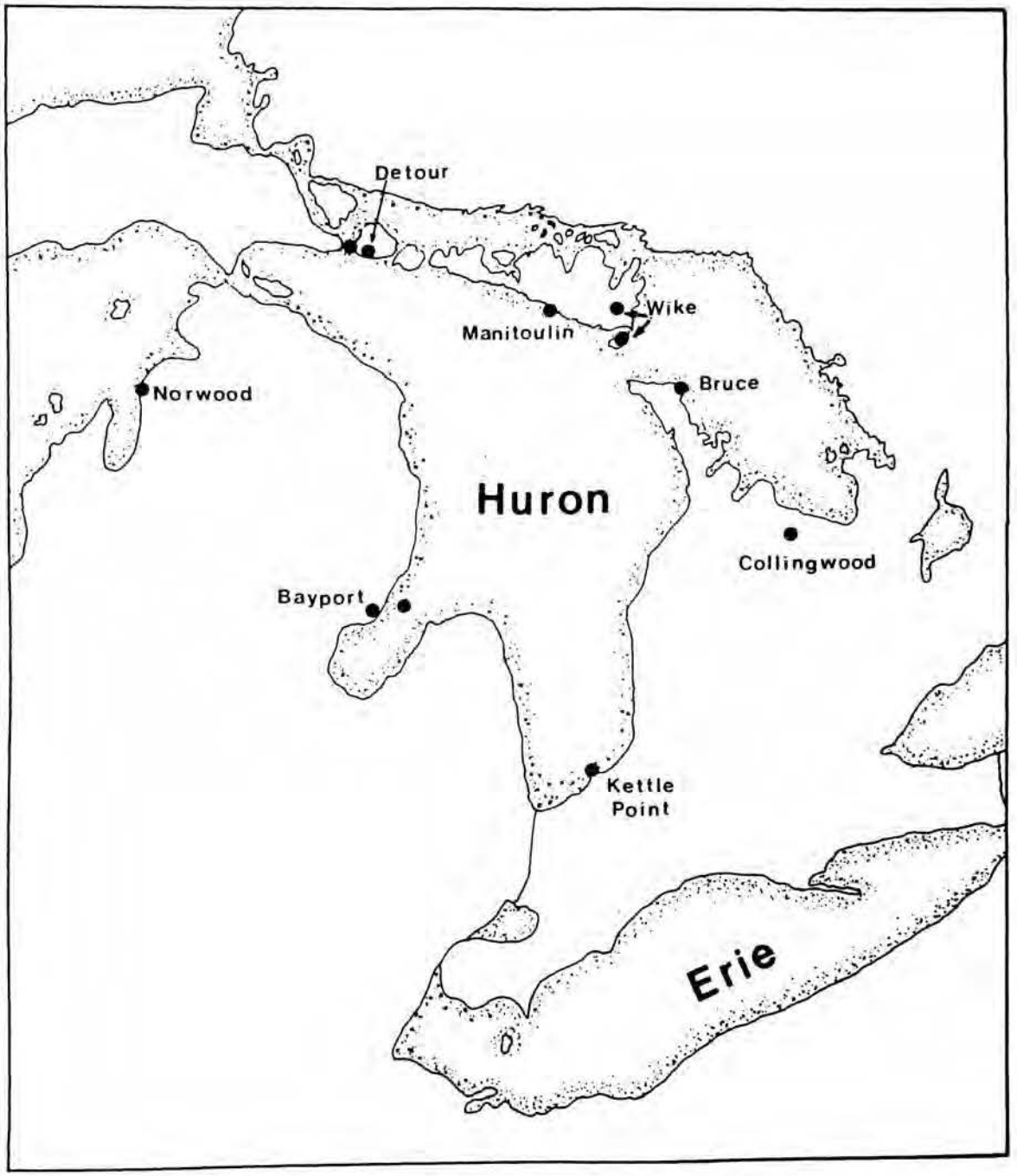

FIGURE 14.10: Chert Sources Utilized by the Odawa.

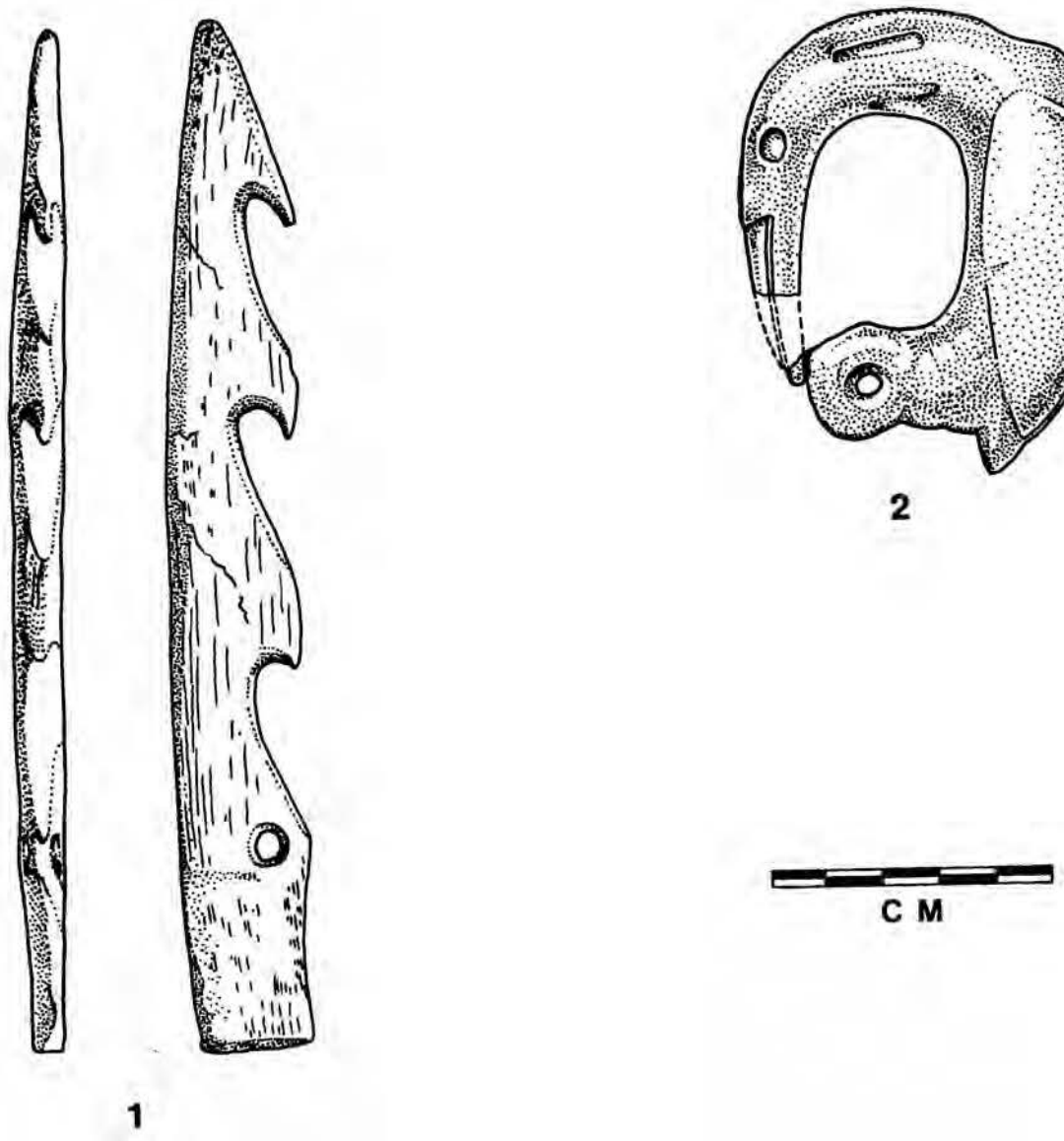

FIGURE 14.11: Adams Collection Artifacts From the St. Edmunds Township Museum. 1: Unilateral Multi-Barbed Antler Harpoon from Dunk's Bay; 2: Banded Slate Bird Effigy Pipe.

ered dog associated with a clay pipe at Dunk's Bay (Fox 1987b; Prevec 1987), those discovered on the Plater-Fleming village (Pearce 1989), and some of Conway's (1987) dog burials at Providence Bay relate to feasts for the dead similar to that described by Cadillac (1962:43). Alternatively, the sacrificed dogs and other animals carefully interred at the Providence Bay and Plater-Fleming villages may all relate to other religious rituals associated with the Midewiwin medicine society (e.g. Conway 1989a).

(souls) passed near a rock called Ecaregniondi, which has often been found marked with the paint which they use to smear their faces.

(Father LeJeune 1636)

Several references in the Jesuit Relations refer to Native beliefs and activities relating to Ekarenniondi - the standing rock (Garrad 1984). It is unlikely to be a mere coincidence that facetted hematite paintstones have been recorded only on the Haney-Cook village (Fox 1979d), situated immediately below the specific formation reported to be Ekarenniondi, which LeJeune states was painted by the local Native people. Spiritual beliefs connected with unusual rock formations, including projecting bedrock, fissures and caves are particularly characteristic of northern Algonquian peoples (Kinietz 1965:327) and it may be that Ekarenniondi, the Blue Mountain headland and the specific rock formation, is a concept borrowed or at least shared by the Petun with the local Odawa population.

The recent discovery of an Odawa grave adjacent to a famous series of caves on the Bruce Peninsula, plus the Wiarton burials beneath the towering "Spirit Rock" suggest that more Odawa spiritual sites await discovery along the northern Niagara Escarpment.

Subsistence

The sale of their French strawberries and other fruits produces means for procuring their ornaments, which consist of vermilion and glass and porcelain beads. They make a profit on everything. They catch whitefish, herring, and trout four to five feet long...In summer the young men go hunting, a distance of 30-40 leagues and return laden with game; In autumn they depart for the winter hunt (which is the best for skin and furs), and return in the spring laden with beaver, pelts, various kinds of fat, and the flesh of bears and deer. They sell all of which they have more than enough.

(Claude Charles Le Roy, Bacqueville de la Potherie ca. 1700)

Sometimes, these Savages sell their Corn very dear...

(Louis-Armand de Lom D'Arce, baron de Lahontan ca. 1695)

The limited archaeological evidence relating to subsistence from Bruce Peninsula Odawa sites is simply a reflection of the minor scale of investigation to date. Nevertheless, settlement patterns suggest that Odawa subsistence activities entailed hunting, gathering and fishing, with an emphasis on the latter. Most sites do not appear to be located with horticultural pursuits as a major consideration. Evidence from the Providence Bay village on Manitoulin Island tends to support the minor importance of corn in the early seventeenth century Odawa diet. Despite extensive flotation processing of cultural deposits, little carbonized corn and only a single bean were recovered, while wild plant foods such as trout lily tubers, cleavers, vetchling, hazelnut, hickory nut , acorn, elderberry, bearberry, brambleberry, chokecherry, cherry/plum, hawthorn and sumac were well represented (Fecteau 1989; Crawford 1990). Carbonized corn was present in the small Shawana site sample (Conway 1989b), along with acorn, hazelnut, brambleberry, elderberry and sumac. Flotation of soils from the Cripps site on Dunk's Bay near Tobermory (Figure 14.2) produced considerable carbonized wood, but no carbonized corn. The foregoing suggests that either cultural factors existed among the Odawa expressed in a paucity of carbonized corn and beans (i.e. food processing different to Iroquoian groups), or that they did not "sow Indian corn" (Biggar 1922-1936[6]:248) in large quantities. Perhaps those wintering in villages among the Petun did cultivate the land; however, the little recovered from Manitoulin Island sites could just as easily reflect Odawa trade in cultigens.

Faunal remains from the Cripps site (Fox 1987b) are dominated by fish, with lake whitefish most abundant, followed by lake trout. Burbot are also present (Prevec 1988c). Whitefish and lake trout were equally represented and dominated in a flotation recovered sample from the nearby early seventeenth century Glen site (Fox and Kenyon 1988; see Figure 14.2). Some burbot and considerable sucker remains were also identified. Both assemblages underline the importance of the fall lake fishery to the Odawa. Other species identified from the Glen site include snowshoe hare, beaver, deer, fox, bear, Canada goose, loon and turtle (J. Wright 1981), and river otter and clam (Fox and Kenyon 1988). Additional species from the Cripps site are duck, grouse, beaver, white-tailed deer, river otter, raccoon, dog, lynx or bobcat, turtle and clam (Prevec 1988c). Elsewhere on Dunk's Bay a disturbed soil deposit contained the remains of a butchered dog, as well as bones of raccoon, white-tailed deer, whitefish, lake trout, walleye and pike (Prevec 1987).

The 1987 Mason site excavations yielded a moose tooth (Molnar 1989). At the multi-component Hunter site to the south, the faunal assemblages associated with the ca. A.D. 1600 and tenth century occupations are very similar (Fox 1989c). Both include spring, summer and fall spawning fish species such as whitefish, sucker, walleye, lake trout, sturgeon, burbot, bass, perch and drum. While fish remains predominate, moose, deer, beaver, grouse and freshwater clams are also represented (Fox 1989c:10).

The Manitoulin Island sites have produced substantial faunal assemblages dominated by fish remains. Unlike the Shawana and Bruce Peninsula sites, Providence Bay included abundant spring spawning species such as sucker and walleye, with relatively few fall-spawning lake trout and whitefish. Sturgeon was also present. Other fauna include moose, mink, beaver, river otter, black bear, red squirrel, dog, snowshoe hare, common loon, duck, gull and freshwater clams (Conway 1987).

Discussion and Conclusions

Waisberg (1977) provides an excellent discussion of the problems of identifying exactly who the Cheveux relevés or Odawa were during the seventeenth and eighteenth centuries. Indeed, various bands or groups of northern Algonquian-speakers tended to identify themselves or were identified by often confused European observers as Odawa during this period (Waisberg 1977:6).

Just where the four historically suggested Odawa bands were based throughout the early seventeenth century, prior to the dislocation to other areas resulting from the A.D. 1649-50 Iroquois attacks, is an intriguing question. Assikinack's (1858) comments concerning the establishment of the Arbre Croche settlement ca. A.D. 1600, as a result of an Odawa incursion into Mushkodensh (Mascouten) territory in Michigan, reflects the fluidity of tribal locations at this period. Champlain's (Biggar 1922-1936[3]) observation concerning the Neutral-Cheveux relevés alliance against the Asistaguerouon or "fire people" is consistent with Assikinack's account, although chert source data suggest that the Odawa were in contact and possibly in conflict with other Central Algonquian tribes of the "fire nation" occupying the southern Lake Huron basin, such as the Sauk and Fox.

The first Jesuit reference to the Nassauketon Odawa, based on Nicolet's 1634 visit to Green Bay (Waisberg 1977:28), correlates with the arrival of Norwood (Eastport) chert from Traverse Bay and an increased amount of catlinite from western Minnesota on Petun village sites. Translated as the People of the Fork, it is probably no coincidence that Norwood chert outcrops only 60 kilometers south of the old Arbre Croche (Forked Tree) Odawa settlement in Michigan (Feest and Feest 1978). This settlement in turn is adjacent to the Straits of Mackinac which form a "fork" with the St. Mary's River issuing from Lake Superior. These most westerly of the Odawa were strategically situated to act as middlemen in the exchange of European goods for Native products, including furs and catlinite from Siouian-speaking groups such as the Winnebago and Dakota to the west.

Conway's (1987) recent archaeological investigation at the Providence Bay site on Manitoulin Island confirms that an Odawa village existed here during the first decades of the seventeenth century (Figure 14.2). With Providence Bay's exceptionally long sand beach, it is tempting to identify the Manitoulin population with the Sable Odawa whose "former dwelling place was in a sandy country, their village on a sandy bay, but the Iroquois drove this tribe from its lands" (Cadillac 1962).

Given Cadillac's comments, Conway (personal communication) has suggested to the writer that the Sinago (black squirrel) band may have been situated in southern Ontario as the range of that species (Scurius carolensis) does not extend north to Manitoulin and the northern shore of Lake Huron. Also, Waisberg (1977:69) cites references to the Kiskakon being the more "Christianized tribe" and to them "paying particular attention to their fields" (Waisberg 1977:109). These references suggest that the Kiskakon (Bear) tribe may originally have been situated in good agricultural lands close to the Jesuit missions, or along the shore of Nottawasaga Bay. Is it a coincidence that the earliest Huron settlers in the region referred to themselves as the Bear tribe? By process of elimination then, the Sinago homeland may have been the Bruce Peninsula.

Archaeological investigation of the Odawa is still in its infancy. The limited settlement pattern evidence available at present is consistent with ethnohistoric information documenting the seasonal mobility and relatively small population size of these early historic lacustrine-oriented bands. We are just now beginning to understand the community pattern variability characteristic of the Odawa. Excavation of the Providence Bay village on Manitoulin Island has illuminated many aspects of Odawa life during the first decades of the seventeenth century, including the construction of longhouses. Substantial Odawa settlements may prove to be primarily a seventeenth century development resulting from intensified interaction with Iroquoian groups. Future research on Collingwood vicinity sites such as Haney-Cook and Plater-Fleming may confirm an Odawa affiliation (Fox 1985c) and Algonquian (Odawa) areas or "ghettos" may someday be identified on major Petun villages such as Hamilton-Lougheed (Fox 1980g). Their diversity of community patterns appears to be mirrored in a material culture characterized by a variety of ceramic wares and exotic lithic materials, reflecting the long distance travel and trade connections of the Odawa. Survey and excavation projects continue on the Bruce Peninsula and Manitoulin, promising a greatly enhanced understanding of Odawa cultural systems and lifeways over the coming years.

Acknowledgments

As in most areas of the province, our knowledge of the Odawa of Bruce County is due in no small part to the contributions of avocational archaeologists. Dr. Frank Morton and Dr. Donald Shutt of Southampton, and particularly the tireless Fritz Knechtel of Hanover, have provided site location data and curated invaluable reference collections. More recently, Ted Rowcliffe, Charles Garrad and Gord MacLean have supplied information to the writer concerning the Bruce Peninsula Odawa, while divers Bill Pennington and Stan McClellan have located ceramic vessels of probable Odawa affiliation in Georgian Bay itself. Also, a virtually complete Iroquoian vessel was discovered near Dunk's Bay in 1989 and reported by Sherri Plewes and Mary Lou Lepain of London (Fox 1989b, 1990).

Others who generously provided access to collections and unpublished reports include: Stan McClellan at the St. Edmunds Township Museum; Barbara Ribey, Curator of the Bruce County Museum; Jean Langdon-Ford at the Canadian Museum of Civilization; Brian Ross, Canadian Parks Service; Thor Conway, Ontario Ministry of Culture and Communications; James Molnar, SUNY Albany; and Beverly Smith, Michigan State University. Janie Ravenhurst produced the artifact drawings, Chris Ellis drafted the maps, Neal Ferris and Ian Kenyon printed the artifact photographic plates, and Dr. Conrad Heidenreich provided a copy of the Bressani map. Naomi Powlett word processed the final chapter draft. Finally, any errors in interpretation or omission are the sole responsibility of the writer.

CHAPTER 15

HISTORY OF THE ST. LAWRENCE-GREAT LAKES AREA TO A.D. 1650

CONRAD E. HEIDENREICH

Introduction

The immediately preceding chapters have outlined the archaeological record and cultural systems of the various Native groups inhabiting southern Ontario at and just prior to the earliest contact with Europeans. In this paper, I outline and attempt to explain the history and nature of the earliest Native-European interactions in the area from initial contact to about A.D. 1650. Although the focus is on southern Ontario, reference is made to events and Native groups in surrounding areas in order to provide a context and background within which to interpret the Ontario data.

Rather than provide a review of what previous authors have written on this subject, I will base my descriptions and explanations almost solely on the early documents and what some of the current archaeology suggests to me. Because of the spotty nature of that evidence, it is inevitable that interpretations will differ among writers. Since I have not been able to find any substantial evidence to corroborate current economic interpretations of early Native behaviour, my interpretations of this period will differ substantially from those of Innis (1962), Hunt (1960), P. Ramsden (1977a, 1978, 1988b), Trigger (1976, 1985) and others. Rather than blindly adopting a "party line" on questions of interpretation, the interested reader is urged to study the primary sources and follow standard procedures for treating historical evidence and formulating interpretations (Collingwood 1956; Carr 1986).

Native Groups in the Sixteenth Century

Early in the 16th century, the St. Lawrence Valley was occupied by two Iroquoian speaking groups collectively termed the St. Lawrence Iroquoians. On Montreal Island was the heavily fortified village of Hochelaga, composed of about 50 large longhouses and a population of perhaps 1500 people (Biggar 1924:156; see also J. Jamieson: this volume).[1] This single large village, with outlying fishing camps, controlled the resources of the river from the mouth of the Ottawa to the entrance to Lac St. Pierre (see Figure 15.1 for the location of these and other groups mentioned in the text). Although the Hochelagans were primarily agriculturalists, fishing was a major component of their subsistence economy, supplemented perhaps by some winter hunting. Downstream from Hochelaga, on the north side of the river between Portneuf and Cap Tourmente, were seven small unfortified villages, with a total population of about 3000. Cartier called this area the "province of Canada" after the local Iroquoian word for "village" (Biggar 1924:245).[2] The inhabitants of "Canada", termed Stadaconans by modern writers after their best known vil-

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[1] This population was estimated by assuming three fires and six families of five members each, per house. It is possible that Hochelaga had as many as 2500 people if there were as many as ten families in a house, as there were in large Huron villages of the early 17th century.

[2] Cartier wrote: "Ilz appelent une ville-Canada." He described them as being "open villages" (Biggar 1924:194). The largest village appears to have been Stadacona with about 500 people (Biggar 1924:131). If there were seven villages in all, a population of 3000 seems reasonable. Thevet, referring to conversations with Cartier,

lage, ranged from Lac St. Pierre to the mouth of the Saguenay River with occasional fishing expeditions as far east as Baie de Gaspé and the north shore of the Gulf of St. Lawrence. Their subsistence economy seems to have been equally based on agriculture and fishing (Biggar 1924:183,199), supplemented by winter hunting. Politically, these villages seem to have been largely independent, although Cartier implied that the headman of Stadacona, Donnacona, exercised some influence in the four villages downstream from his, and that all the St. Lawrence villagers were "subjects" of the Hochelagans (Biggar 1924:161).

At the time of Cartier's arrival, the Hochelagans and Stadaconans were at peace with each other. Both groups however, were at war with some of their other neighbours, the Hochelagans with the *Agojuda (mauvaise gens)*, whose warriors came down the Ottawa River (Biggar 1924:171),[3] and the Stadaconans with the *Toudaman* who were described as living to the south of Stadacona (Biggar 1924:177).

The Stadaconans indicated that other warring groups lived in the interior up the Richelieu River (River *Pabecherib)*, a route they seemed to have known well. According to Thevet these warring groups lived near the headwaters of the Richelieu River and fought against "our Canadians" (Stadaconans). Around Lake Champlain (Lake *Pathnos)* was another group of people, also under attack from the same warring groups further south (Biggar 1924:203; Schlesinger and Stabler 1986:96-97, 117-118; Biggar 1922-36 [2]:90-91). The people south of Lake Champlain were called the *Magots*, but Thevet does not state whether they were involved in the wars. It is likely that the *Magots* were the Mahican.[4] The *Agojuda* were probably the prehistoric Huron-Tionontate (Petun) who occupied south-central Ontario early in the 16th century, or, less likely, the Iroquois south of the St. Lawrence. The identity of the *Toudaman* is also obscure, although it is probable, in the light of Thevet's writings, that they were the Micmac. Thevet also states that besides fighting the *Toudaman*, the "Canadians" fought against other groups on the lower St. Lawrence and the Saguenay.[5] The enemies of the Stadaconans up the Richelieu Valley may have been the Mahican, Mohawk or Abenaki. Beyond Thevet's statement and the reference in Champlain, nothing is known about the Lake Champlain people. It may be that they are an as yet unidentified Iroquoian group.

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described the Stadaconan villages as being "a few houses arranged in a semi-circle." The houses were "...twenty-five or thirty paces long and ten paces wide," or about 60 to 70 feet by 25 feet (Schlesinger and Stabler 1986:38).

3 This passage is vague. It may be that the Upper St. Lawrence River was meant rather than the Ottawa. From the description of the battle dress of the *Agojuda*, it is likely that they were an Iroquoian group. Both Champlain (Biggar 1922-36 [3]:77, 135) and Sagard (Wrong 1939:154) describe Huron battle dress in identical terms to Cartier's for the *Agojuda*. There are no references that the Ontario Algonquian groups wore armour as described by Cartier, Champlain, and Sagard.

4 Hoffman (1961:176) speculates that the *Magots* are the Mohawk (Maqua) because the names are similar. The names Mohawk, Maqua and other variants are Algonquian (Fenton and Tooker 1978:478). What Hoffman does not explain is why the Iroquoian Stadaconans or Hochelagans would be giving Cartier an Algonquian term for these people. It seems far more likely that the word *Magots* comes from *Agotzagena (Akochakanen)* which was an Iroquoian term used especially for the Mahican (Jameson 1909:172; Brasser 1978:211) and in a more general sense, for any people who speak a strange language.

5 Cartier does not clearly identify the *Toudaman* with the Micmac. In his voyage of 1534, Cartier was greeted by the Micmac with the words "Napou tou daman asurtat" (Biggar 1924:50) variously translated as "We want to have your friendship," and, "Friend, I like your appearance." Cartier may have called the Micmac *Toudaman* after this greeting. It was Thevet who clearly identified the Micmac as enemies of the "Canadians" (Schlesinger and Stabler 1986:5, 14, 35, 38), although he called them *Tontanians* and *Toutaneans*. The other groups on the St. Lawrence and Saguenay allegedly at war with the "Canadians" (Stadaconans) were said to be the *Chicorans* and *Guadalpes* (Schlesinger and Stabler 1986:14, 38). It is likely that Thevet took these names from some source that treated the Ayollon voyages to the Florida and Carolina coasts. *Chicora* was a Native "province" and *Guadalpe* a Spanish one (Quinn 1977:144-145).

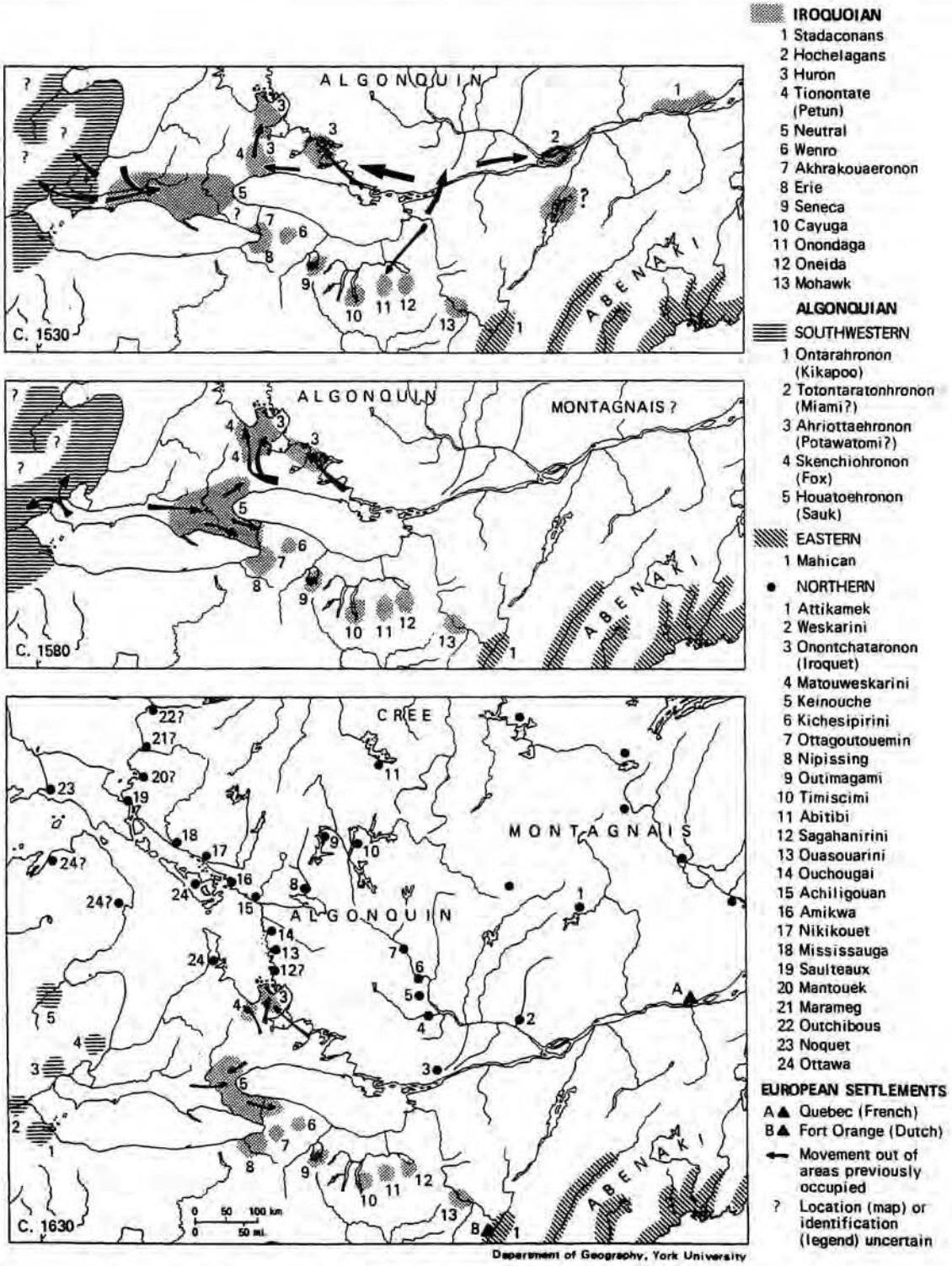

FIGURE 15.1: Changing Distributions of Native Groups in the Lower Great Lakes. Note that locations, especially for the seasonally mobile northern Algonquian groups, are not absolute.

The area south of the Canadian Shield in south-central Ontario was occupied by the prehistoric Huron-Tionontate. To the southwest of them were the prehistoric Neutral and south of Lakes Ontario and Erie, the five Iroquois Tribes, the Wenro, and the Erie. All were primarily agriculturalists living in substantial villages, the largest of which were fortified, and all spoke Iroquoian dialects. Of these, the Ontario groups may have had a population of 60,000 and the ones south of the lake 40,000 to 50,000.

Both the archaeological evidence and the 16th and 17th century literature suggest that the Huron-Tionontate were engaged in wars with the St. Lawrence Iroquoians (Pendergast 1985), and perhaps also with the New York Iroquois, well before Cartier's arrival. In southwestern Ontario, the Neutral were warring against the Algonquian groups on the Michigan Peninsula (Biggar 1922-1936 [3]:97,99, [6]:249; Wrong 1939:157). Through the 15th and 16th centuries, these warring groups were moving further from each other. By the mid 16th century, the Algonquian groups had shifted out of southwestern Ontario while the Neutral had moved east of the Grand River (see Murphy and Ferris: this volume; Lennox and Fitzgerald: this volume). The St. Lawrence Iroquoians had abandoned the upper St. Lawrence to Montreal Island, while the Huron-Tionontate were gradually moving away from Lake Ontario and the Kawartha Lakes towards the west of Lake Simcoe (Jamieson: this volume; Ramsden: this volume). Vast no-man's-lands, heralding the tribal entities of the 17th century, were making their appearance.

To the north of the Iroquoian groups were the Algonquian[6] bands of the Canadian shield. It is probable that their locations and way of life were similar to those encountered by Europeans early in the 17th century. While the Nipissing and Ottawa Valley Algonquin practiced some casual agriculture; the dominant economy of all the groups was spring to autumn fishing and winter hunting. The symbiotic trade relationships between the bands of the shield and the tribes of southern Ontario observed in the early 17th century probably existed also in the 16th century (Heidenreich 1971:227-232). In addition, small amounts of copper were traded to the St. Lawrence Valley, perhaps from Lake Superior. It is not known whether trade was carried on by trading parties sent out specifically for that purpose, or whether rare items such as copper goods were simply traded from one group to the next until they found their way to a permanent recipient.

East of the Stadaconans, along the north shore from the mouth of the Saguenay River to the Strait of Belle Isle were a number of small Montagnais bands alternating summer to fall fishing and hunting for sea mammals with winter caribou hunting in the interior. On the south shore, from Chaleur Bay eastward to the Atlantic shores of Nova Scotia, were a number of Micmac bands alternating fishing and sealing with winter hunting of moose and caribou. Little is known of their populations, however two groups sighted by Cartier in Chaleur Bay appear to have numbered about 300 each (Biggar 1924:48-57).[7]

Sixteenth Century European-Native Contacts

Prior to Cartier's first journey in 1534, Native-European contact had been confined to the Atlantic coast, from Hamilton Inlet south to New England. The major exploring expeditions, commissioned as they were to find a a route to the Orient, saw no need to establish friendly relations with the Natives. Between the Corte-Real voyage (1501) and that of Gomes (1525) kidnapped Natives began to make an appearance as slaves and curiosities at various European courts. The two earliest colonizing ventures, by Karlsefni (ca. 1010) and Fagundes (ca. 1521-1526) ended in failure in part because of their inability to establish friendly Native contact (Ganong 1964:157; Magnusson and Palsson 1965:64-67). Sporadic contact with fishermen along the Atlantic coast and the Strait of Belle Isle seems to have been more friendly and resulted in an occasional exchange of furs and skins for items of European manufacture

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6 The term "Algonquian" will be used herein to refer to all groups of that language family while "Algonquin" refers to particular northern Algonquian-speaking groups in the area of the modern Ottawa River Valley (see Trigger [editor] 1978).

7 Cartier met the first band composed of "40 to 50 canoes" *(barques)* near Port Daniel and a second group of 300 men, women and children near Baie Tracadigache.

(Biggar 1930:462).[8] In view of the paucity of references regarding trade on the Atlantic coast, the strong European focus on fishing off Newfoundland, and the preoccupation of European expeditions on finding passages through the continent, it is unlikely that much in the way of European goods reached the lower Great Lakes area before Cartier's time. There is certainly no documentary or archaeological evidence to merit the kind of speculation about a pre-Cartier trade and its possible effects on Ontario Native groups espoused by some recent writers on the subject (P. Ramsden 1978, 1988b).

Contact with Natives west of the Atlantic shores began with the voyages of Jacques Cartier. The Montagnais of the Strait of Belle Isle had seen Europeans before but the Micmac of the southern Gulf and the Stadaconans fishing at the Gaspé had not.[9] Similar to other instances of first contact, the Micmac greeted the newcomers enthusiastically and attempted to barter the skins in which they were clothed for whatever the Europeans were willing to give (Biggar 1930:462).[10] Cartier and his men were obviously apprehensive about the number of Micmac they saw. They had come to find a route to the Orient and eventually gave gifts and traded because it seemed to be a way of establishing friendly relations. Cartier regarded the entire transaction as something "of little value."

On his second voyage, Cartier became increasingly obsessed with the discovery of a route to the Orient and precious minerals. The Stadaconans, among whom he had landed, wanted to broaden the special relationship they felt they had established with him through their meeting at the Gaspé in the previous year. In return for a more formal alliance, including an exchange of people, they offered to guide Cartier to Hochelaga (Biggar 1924:132-133). To the Stadaconans, one of the most impressive aspects of the French was their arms. It is possible that the alliance they sought was an attempt to gain prestige among the local villages, some measure of preeminence over the Hochelagans, and protection from the raids of the *Toudaman* and other enemies. There is no evidence that the Stadaconans wanted "...to establish a middleman position in the trade of European goods with the interior" (Trigger 1976:188; see also Hunt [1960:17] and P. Ramsden [1978:102]). There simply was not much trading between the Stadaconans and Cartier's men, which would have been another way of establishing and maintaining friendly relations. Some provisions (fish and meat) were exchanged for European goods because they were offered, rather

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[8] In 1542 a Spanish fisherman recalled that the Natives of the Gulf of St. Lawrence area on the north shore had given him "deer and wolf skins" for "axes and knives and other trifles." For a mention of "marten skins," see Biggar (1930:453).

[9] Contrast the behaviour of the Natives (probably Montagnais) met by Cartier at Natashquan Point with that of the Micmac, Stadaconans and Hochelagans (Biggar 1924:53, 55-56, 60, 76, 125, 150-151, 162-163). Those at Natashquan Point were quite familiar with Europeans and their vessels. The behaviour of the Micmac and St. Lawrence Iroquoians was quite different from that of the Montagnais, with expressions of joy, dancing, singing and touching of the Europeans. It is probable that the Micmac had heard of the Europeans but not actually met any.

[10] The Micmac met by Cartier waved skins *(peau)* at him (Biggar 1924:49), not furs. When the French finally showed signs of being friendly, the Micmac traded them the skins "with which they clothe themselves" (Biggar 1924:52-53, 56). At no time does Cartier refer to furs *(fourrure)* let alone the beginnings of a fur trade. It is quite apparent that he was not interested in what the Natives had to offer. On both occasions when he "traded", he regarded what he received as "of little value" (Biggar 1924:52, 56). This meeting is often cited as an indication that the Chaleur Micmac had prior contact with Europeans and were used to trading furs. In view of the manner in which the Micmac received the French and their willingness to part with their clothing for a few trade goods, it may be also that the Chaleur Micmac had heard from other Natives on the Atlantic Coast that some of these "newcomers" bartered for skins. It may also be that like the Natives met by the Norse, skins were bartered as a way of establishing friendly contact. Besides food, skins were the only trade item most Native groups had.

[11] Cartier makes many references to giving gifts, often receiving food in exchange (Biggar 1924:125, 131, 134, 143, 147, 150, 153, 176, 187, 230). Most often the French gave knives, beads and hatchets. There are also references

than because the French wanted them.[11] There are no references to trade in furs or skins.[12] Although Cartier seems to have understood that he was being offerred an alliance, he did not regard the offer as important. His subsequent visit to the Hochelagans, without Stadaconan guides, did nothing but deepen the distrust that had already formed between him and the Stadaconans than not even gift giving could overcome.

By the spring of 1536, the Stadaconans began to fuel Cartier's obsession with precious minerals by elaborating earlier stories of a wealthy kingdom of Saguenay (Biggar 1924:170, 200-201, 221-222). It is probable that these stories were concocted to get rid of what had metamorphosed itself into a menace established in their midst; a menace that was heavily armed, that kidnapped people, and that could not be bound by an alliance of friendship. These stories led to the kidnapping of more Stadaconans in order that they repeat their tales to King François I.

War between France and Spain (1536-1538) delayed the Cartier-Roberval expedition until 1541. From the start it was poorly organized and manned with inexperienced personnel. A settlement was to be founded, a mission opened to the Natives, a way found through the Lachine Rapids, and contact established with the fabulous kingdom of Saguenay (Biggar 1930:128-131, 178-185). Although Cartier established a fortified base (Charlesbourg-Royal) near the present Cap Rouge, his other aims resulted in failure. During the winter he met organized resistance from neighbouring villages (Biggar 1924:259, 1930:456-457, 463) and in the spring he departed with a load of "gold" and "diamonds" that turned out to be pyrite and quartz. Roberval, who arrived in 1542 shortly after Cartier had departed, also feared Native attacks but apparently managed to trade fish with some of them in the late fall (Biggar 1924:267). He too departed after one winter, his aims ending in failure.

It is quite clear that the Cartier and Roberval expeditions returned to France with a very unfavourable image of Canada. It was a country with a harsh climate, there was no wealth in minerals and it was occupied by an impoverished, hostile Native population who had nothing worthwhile to trade; in short, a land from which little profit could be derived except from fish, sea mammals and timber.[13]

After the Cartier-Roberval fiasco, France lost interest in the St. Lawrence Valley. As a consequence of these expeditions the Natives also began to exhibit hostility to European visitors. These hostilities arose out of Cartier's last expedition rather than Roberval's. According to Thevet, some Frenchmen had willfully and cruelly murdered a number of Natives, a deed that resulted in Native retaliation (Schlesinger and Stabler 1986:15, 42). This incident seems to account for the testimony of a Basque captain that he had met a "Canadian" chief in the Strait of Belle Isle in the summer of 1642 (before Roberval's visit), who claimed that the Natives had killed 35 of Cartier's men (Biggar 1930:462-463). The long term result of these murders was that the Stadaconans:

> have not allowed any Christian to approach and set foot on the ground, on their shores and boundaries, or do any business with them as we have since found out from experience...(for)...once offended it is impossible to conciliate them (Schlesinger and Stabler 1986:15, 42).

For the time being, the interior was closed to the French.

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to rings, awls, two swords, two brass kettles, one brass basin and one crucifix.

[12] The only mention of furs was a parting gift of three bundles of beaver and seal skins given to the kidnapped headman Donnacona by his villagers when Cartier set sail for France in 1536 (Biggar 1924:233). In view of Cartier's expressed lack of interest in furs and skins, could these skins have been given to Donnacona so that he could clothe himself and his companions?

[13] This sentence was paraphrased from two captions on a map made by Pierre Desceliers in 1550 describing Cartier and Roberval's discoveries. Part of the map is reproduced in Biggar (1924: Plate XIV).

After the 1540's, attention shifted to the maritime resources of the Gulf of St. Lawrence area. Spanish and French Basques opened up the north shore of the Gulf to whaling. Others, principally French Basques, Norman and Bretons, engaged in fishing and sealing throughout the eastern reaches of the Gulf, especially its islands. Although a small trade in furs and hides had been an incidental activity of some cod fishermen since early in the century,[14] it was not until the late 1560's that a few vessels were returning with profitable quantities of fur (Trudel 1973:57), mainly from the eastern reaches of the Gulf and the Atlantic Coast. The first trickle of fur seems to have led to a renewal of interest by the King of France in Canada. In 1577, La Roche de Mesgouez, a Breton, was given a comprehensive grant by Henry III to establish a colony and exploit the new lands. It is probable that La Roche's grant and his connections to the shipowners of St. Malo, led to the first voyages being specifically directed for fur trading. In 1581 a small Breton ship made a profitable voyage to the Gaspé area, followed by a similar voyage to the New England coast in 1582 (Quinn 1939 [2]:363, 467; E. Taylor 1935 [1]:205-206).

Early in the 1580's, the St. Lawrence River was again opened to trade "...the olde matter beginning to grow out of minde ...and being drawen by gyfts ... they (natives) are againe to admit a traffique (trade)" (Hakluyt 1589 [8]:145-146). Prior to this time, whatever small amounts of trade goods reached the interior Native groups must have come from the Gulf and Atlantic coast through a number of intermediary groups. There simply was not much of a fur trade before 1580 and only the coastal Native groups had direct contact with Europeans. It is probably for these reasons that no trade goods have been found on St. Lawrence Iroquoian archaeological sites (see Jamieson: this volume) and why they are scarce on all sites dated prior to the 1580's. In 1583, three ships from St. Malo traded at the Lachine rapids, the first known to have done so since Roberval departed (E. Taylor 1935 [1]:205-206, [2]:288),[15] while a ship under Bellenger out of Le Havre traded between Cape Breton and the Penobscot River (Quinn 1979 [4]:306-308). These early ventures were given impetus when Russian furs to Europe dried up in 1583 with the loss of Narva, their Baltic port, to the Swedes.[16] In 1584, five ships returned to St. Malo from "...the Contries up the Bay of St. Lawrence..."with such a profit that ten ships were outfitted the following year, although it is not known how many actually sailed (E. Taylor 1935 [2]:278). Apart from the expedition in 1583 and possibly 1584, it is not known if any other traders went as far upstream as Montreal Island before the end of the century. What little trade there was during the remainder of the century seems to have been in the Gulf of St. Lawrence area and upstream as far as Tadoussac. Indeed, Lescarbot, writing in 1610, stated that prior to the expeditions of the late 1590's "...Tadoussac had hardly been heard of...," that the Natives sought out cod fishermen "...in the neighbourhood of Bacallaos (Newfoundland)..." to trade with them and that "...none of our merchants had passed Tadoussac save Jacques Cartier" (Grant 1914 [3]:4, 25).

Late in the 16th century, the French court came to realize that nothing lasting could be gained in New France without a permanent base for further operations. In 1599 Henry IV gave Chauvin Tonnetuit, a Hugenot and former officer of his, a trading monopoly for New France with orders to "colonize the country and build a settlement" (Biggar 1922-1936 [3]:306). Chauvin was already familiar with the cod and fur trade out of Canada, having operated

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[14] The earliest references seem to be for a trade in hides, not furs. For example, John Lagarto, a Portuguese navigator writing to the King of Portugal about 1539 stated:

> And there are certain animals whose hides as leather are worth ten cruzados each, and for this sum they are sold in France, and that 10,000 of these skins being brought they are worth 100,000 cruzados (Biggar 1930:78).

Note that the sentence is in the conditional. Lagarto wrote that hides were sold for ten cruzados and speculated that *if* one could get 10,000 of them one *could* gain 100,000 cruzados.

[15] Jacques Noël was in the Montreal area in 1583 to 1585 and met with Natives. Unfortunately he does not state what Natives they were (Quinn 1979 [4]:305). Hakluyt was told that the French had been as far as "the sea on the backside of Hochelaga," probably Lac St.-Louis (E. Taylor 1935[2]:288).

[16] The author is indebted to Father Lucien Campeau, S.J. for this information.

four ships in Canadian waters since 1596. This monopoly led to the establishment of the first trading post at Tadoussac in 1600. In 1603, the first geographical survey of the St. Lawrence Valley since Cartier was carried out by Champlain (Biggar 1922-36 [1]:85-189).

Champlain's survey disclosed the absence of any permanent Native settlements on the St. Lawrence, a dramatic change from that encountered by Cartier. At various places along the river he, and later other observers, were shown grassy areas where formerly villages had stood (Biggar 1922-1936 [2]:77, 91, 176; Jesuit Relations [hereafter J.R.] [9]:159). On a trip to Montreal Island in 1611, Champlain observed 60 arpents (about 20 ha) of grassland along the St. Pierre River that were "formerly cultivated fields" (Biggar 1922-1936 [2]:176; Grant 1914 [3]:26). Contemporary writers were certain that this was the place where Hochelaga had stood. What happened to the St. Lawrence Iroquoians? Unfortunately there is no satisfactory answer. Early 17th century opinion was that they were destroyed through warfare sometime after the 1570's (J.R. [29]:173). Algonquian informants blamed the Huron for the destruction of Hochelaga (J.R. [22]:207-215, [29]:173). In view of the archaeological evidence and the possible identification of the *Agojuda* with the Huron, this suggestion has some merit (Pendergast 1985:34-36). If the Huron defeated the Hochelagans, were they also responsible for the demise of the Stadaconans? Stadaconan warfare was with the *Toudaman* who may have been the Micmac. They also warred with some unidentified groups near the headwaters of the Richelieu River and up the Saguenay Valley. That the *Toudaman* were capable of launching a major raid was told to Cartier by Donnacona. In 1533, 200 Stadaconan men, women and children were surprised and killed by the *Toudaman* while asleep on an island opposite the mouth of the Saguenay (Biggar 1924:177-178). But the systematic destruction of at least seven villages with an estimated population of 3000 by the Micmac is not what one would expect from a society composed of bands of fishers and hunters.

In view of early 17th century Mohawk activities in the St. Lawrence Valley it is tempting to credit them for the destruction of at least the Stadaconans. Cartier and Thevet mentioned the presence of warring groups up the Richelieu Valley, later called the River of the Iroquois. By Champlain's time the St. Lawrence upstream from Quebec was unsafe for any non-Iroquois groups because it was infested by Mohawk hunting and raiding parties (Biggar 1922-1936 [1]:137, [3]:31). Moreover, Lescarbot writing in 1610, and the Recollet Jamet in 1625, both blamed the Iroquois for the depopulation of the St. Lawrence Valley (LeBlanc and Baudry 1967:350; Grant 1914 [3]:117, 267-268). Lescarbot must have obtained the story second hand in 1606 or 1607 from Champlain or some traders while he was at Port Royal, while Father Jamet obtained his in 1625 from an old Huron who said that he remembered seeing Hochelaga. There is little question, judging from the archaeological as well as ethnohistorical evidence, that both the Huron and Iroquois had the capability of destroying one large and seven small villages populated by less than 5000 people.

The suggestion by archaeologists that the Huron destroyed the St. Lawrence Iroquoians is based on the presence of St. Lawrence Iroquoian pottery and the absence of St. Lawrence Iroquoian pipes on late prehistoric Huron village sites (Burger and Pratt 1973; Pendergast 1975, 1981, 1985; P. Ramsden 1977a). This distribution is said to indicate the result of conflict, in which women, who were the potters, were taken captive, but not the men who were the pipe makers. The underlying assumption is that pots and pipes were both utilitarian objects which would continue to be made in captivity. While such a case may be made for pots, it is more difficult to make for pipes. Pipes appear to have had some symbolic value; they were made by the men, smoked by them on ceremonial occasions and mended with a person's own blood when they broke (Montizambert 1881:55; Wrong 1939:197). If pipes symbolized social groups such as lineage or clan, it is possible that pipe forms might not have been retained in captivity because survival in captivity depended on formal adoption into a family among a person's captors. If we suppose, however, that the assumptions about the distribution of St. Lawrence Iroquoian pots and pipes are correct, then it is possible to formulate an interesting hypothesis about the results of 16th century warfare (see also J. Jamieson: this volume).

While there is ample evidence of St. Lawrence Iroquoian pottery on prehistoric and later Huron sites, it is absent on Mohawk sites (Ritchie 1965:316), all but absent on Oneida sites (Pratt 1976), and has not been reported on Cayuga and Seneca sites (Niemczyki 1984). Some Onondaga sites dating to the first half of the 16th century have St. Lawrence Iroquoian pottery, specifically from those sites north of the Onondaga at the east end of Lake Ontario

(Bradley 1987:83-89). The question is whether these are refugees from the Huron wars or captives of the Onondaga? Since both St. Lawrence Iroquoian pots and pipes are present on Onondaga sites (Bradley 1987:61-64) one could argue that these people were refugees, not captives. If indeed the St. Lawrence Iroquoians fled in significant numbers to friendly Onondaga and, perhaps in smaller numbers, to the Oneida, it would help explain why the eastern Iroquois were so at odds with the eastern Huron *(Arendaronon)* and why some 17th century Frenchmen had been told by Native informants that the Iroquois at one time inhabited the St. Lawrence Valley from Montreal to Quebec (Blair 1911:42-43; A. Adams 1961:46; A. Bailey 1933:106; Fenton and Moore 1974 [1]:86). Much more problem oriented archaeological work must be done before any of this rises above the level of speculation.

While it is difficult to determine who destroyed the St. Lawrence Iroquoians, it is pure conjecture why they were destroyed. Although there is no documentary evidence, recent scholars have speculated that the Huron or Iroquois, or both, removed the St. Lawrence Iroquoians in order to gain access to European trade goods (Trigger 1985:147-148).[17] If the destruction of the Hochelagans and Stadaconans took place late in the 16th century over European trade, why did neither the Huron nor the Iroquois make the effort to contact European traders when these arrived at Tadoussac late in the 16th century (Grant 1914 [3]:25-26)? The late 16th and early 17th century trade at Tadoussac was with Montagnais, while the rest of the St. Lawrence Valley was vacant except for frightened summer Montagnais fishing parties and the Iroquois raiders who preyed on them. There were no Iroquois or Huron traders on the St. Lawrence and when these groups were first contacted by Champlain, it was that explorer's impression that neither group had apparently seen Europeans before (Biggar 1922-1936 [2]:68-71, 98-100, 109). In fact, the Huron showed little interest in direct trade with the French until 1611 (Biggar 1922-1936 [2]:186-206), and did not participate in a major fashion until after Champlain visited them in 1615 (Heidenreich 1971:232-242). One would have thought that any group strong enough to disperse the Hochelagans and Stadaconans in order to gain access to European traders would have been strong enough to make their presence felt at Tadoussac. It is also difficult to believe that the few trade goods that entered the St. Lawrence Valley during the 16th century, especially before the 1580's, were sufficient incentive to cause the destruction of an estimated 5000 people. Early 17th century writers such as Champlain, Lescarbot and the Jesuits blamed "their (the Iroquoians) frequent wars" for the disappearance of the St. Lawrence villages, thereby suggesting traditional motives that were present long before European contact. Archaeological evidence suggests that large scale warfare predated Cartier, including the breaching of fortified villages, the abandonment of land along the frontier of conflict and the adoption of prisoners (Bradley 1987:83-89; Finlayson 1985a:438-440; J. Tuck 1978b:330-331). The destruction of the St. Lawrence Iroquoians may have been the final act in a series of escalating events that had their origin before the 16th century.

Whatever the original motives were, the fact that the St. Lawrence Iroquoian groups were gone early in the 17th century fundamentally influenced French colonization. Unlike the English, Dutch or Spanish who established their colonies among a resident Native population, the French slipped into an evacuated area whose former residents had been destroyed and absorbed by others. It permitted Champlain and his successors to take possession of an accessible, fertile area, with a small European population in relative security.

The Establishment of Permanent French-Native Relations

In 1603 Pierre Du Gua de Monts succeeded to the monopoly operated by Chauvin and De Chaste. Discouraged by the winters at Tadoussac he decided to begin a colony in Acadia while continuing the fur trade on the St. Lawrence. In 1607 the monopoly was rescinded and the Acadia venture collapsed. On the urging of Champlain, Du Gua returned to the St. Lawrence in 1608. Champlain was to build a post and explore, while Du Gua pursued the fur trade. Quebec, the site chosen by Champlain, had four natural advantages. It was at a narrowing of the river permitting some protection of the trade against French competitors; the lands surrounding Quebec were fertile enough for a

[17] Trigger (1971:279) states that the *Agojuda* "...may have been the Hurons or Iroquois..." but argues that it was most likely the Mohawk (Iroquois) who eventually destroyed the St. Lawrence groups in order to "...trade directly with the Europeans" (Trigger 1985:147). P. Ramsden (1988b:47) favours the Huron as the group who dispersed the St. Lawrence Iroquoians, also in order "...to trade directly with the Europeans".

future colony; in its hinterland were friendly Natives accustomed to trading; and Quebec was within striking distance of the Lachine Rapids, the obstacle that had to be overcome to continue exploration to the "western sea." From experiences gained by the French traders at Tadoussac, as well as their own after 1603, Du Gua and Champlain realized that the success of any French venture depended on good relations with the Natives north of the St. Lawrence where the furs were coming from, and the establishment of contact with groups farther in the interior. From a Native point of view this meant a firm alliance and French participation in their wars (Biggar 1922-1936 [2]:69-70, 110-111, 254, 283-284, [3]:31-32). As early as 1602, Henry IV had promised such support to the Tadoussac Montagnais (Biggar 1922-1936 [1]:98-100). Champlain realized that a secure Quebec, the continuance of trade, and inland exploration could only be carried out with Native help (Biggar 1922-1936 [3]:31-32). In 1609, therefore, with the *habitation* at Quebec built, Champlain and two armed men participated on a raid with a Montagnais - Algonquin - Huron war party up the Richelieu Valley to Lake Champlain. To Champlain it was an opportunity to explore one of the major inland rivers and cement an alliance; to his Native companions it was proof of French goodwill; but to the Mohawk it marked the beginning of what they regarded as French interference in their affairs. In 1610 Champlain participated in a second battle which earned him a special stature with his Native allies. The other traders were regarded as "women, who wish to make war only on our beavers" (Biggar 1922-1936 [2]:121). Both Algonquin and Huron promised to help him explore the interior. The Algonquin and Huron were willing to receive a French boy (probably Brûlé) in exchange for a Huron boy (Savignon), so that both could learn each other's customs and languages (Biggar 1922-1936 [2]:138-142, 186-188, 201-202, 307). Not only did this gesture help further the alliance, but it began the important French tradition of developing interpreters who would live among Native allies and act as a liaison between them and the colony.

Champlain had proven himself to his allies, but the potentially important Huron trade and western exploration had failed to develop. In 1613 he tried to explore the Ottawa River route without Native guides and was turned back by the *Kichesipirini*, a local Algonquin group, who may have feared that French contact with groups further in the interior would jeopardize their privileged position with the French traders.[18] The promise of French arms on yet another raid on the Iroquois finally got Champlain (with Brûlé, 13 men and the Recollet priest Joseph Le Caron), to the Huron country in 1615. From there Champlain, his soldiers and 500 Huron travelled to the Onondaga (or Oneida) and attacked a major village. Brûlé voyaged to the Susquehannock, allies of the Huron against the Iroquois, to bring an attacking force from the south. To Champlain, only the military aspects of this trip were disappointing. He had finalized the French-Huron alliance, brought the Huron into the fur trade, established contact with the Nipissing, Ottawa (or Odawa) and Petun, and obtained a rough outline of the Natives and geography of the eastern Great Lakes (Harris 1987: plate 35). The year 1615 also marked the permanent introduction of the Catholic Church to the St. Lawrence, with three priests at Quebec and one among the Huron.

After 1615 the fur trade gradually began to pick up. Champlain's supposition that the numerous agricultural Huron would play an increasingly greater role in the fur trade proved to be correct. Their well-developed pre-contact trade network between the agricultural south and the Algonquian bands to the north was an existing framework through which French trade goods could easily be dispersed throughout the eastern Great Lakes. By the early 1620's the Huron displaced the Ottawa River Algonquins as major suppliers of French goods to the interior groups. The Algonquin adapted to this situation by taking increasingly higher toll charges from any Huron and Nipissing traders who passed down the Ottawa River (Biggar 1922-1936 [5]:103; Wrong 1939:255-258; J.R. [9]:275, [10]:77). As Huron trade with their neighbours grew, so did their sense of proprietorship over the trade (J.R. [21]:177, 203-205). Although the French tried on a few occasions to develop trade contacts with other groups, as far as is known no Neutral, Petun, Ottawa or Ojibwa ever travelled to the St. Lawrence while the Huron operated the fur trade. Gradually, French trader's agents who occasionally visited non-Huron groups were withdrawn and by the late

[18] This is a modern interpretation. The *Kichesipirini* told Champlain that they would not guide him to the Nipissing because they were on unfriendly terms with them and feared for their and his safety. They were also annoyed at Champlain because he was absent from the St. Lawrence when they came to trade and make war in 1612. The French traders who were there would not accompany them on the warpath and had "treated them badly" (Biggar 1922-1936 [2]:283-297). The modern interpretation finds support in a statement made in 1636 (J.R. [9]:275). Champlain had no problems ascending the Ottawa River in 1615.

1620's the trade west of Lachine Rapids was in Huron hands.

By the mid 1620's the fur trade in New France could be considered a success with an annual take of 12,000 to 15,000 beaver (J.R. [4]:207). On the other hand, there were only about 20 permanent colonists (Trudel 1973:165) and little headway had been made converting the Natives to Christianity. In 1625 the Recollets were joined by the better manned, better organized and financed Jesuits (Trudel 1973:135). These two orders now combined their complaints about the lamentable state of the colony. In 1627 Cardinal Richelieu, now in control of French commerce and colonies, began to set the foundations for a new colonial administration. A result was the large, well-financed, *Compagnie des Cent-Associes*, charged with bringing settlers, developing the trade and vigorously promoting missions to the Natives (Trudel 1973:168-171). Unfortunately the debut of the company was blunted when their first expedition, including 400 colonists, was captured by the English in the Gulf of St. Lawrence. The following year, starved into submission, Champlain was forced to surrender the colony (Biggar 1922-1936 [6]:51-61). Although the St. Lawrence colony had been seized at a time of peace, it took until July 1632 before the French could re-occupy Quebec. During the intervening years the Anglo-Scotch Company operated the trade at a considerable profit. French attempts to muster competing trading expeditions during the years of the English occupation ended in successive losses to the *Compagnie des Cent-Associes* (Trudel 1973:175-179).

Establishment of Permanent Dutch-Native Relations

The French were able to expand trade successfully in a large part because the Montagnais, near whom they had settled, had good relations with the Ottawa Valley Algonquins who in turn were on good terms with the Huron. The Dutch were not as fortunate. In 1614 they had built their post, Fort Nassau, on the Upper Hudson River among the Algonquian Mahican with whom they engaged in trade. Although the Mahican had good relations with their Algonquian neighbours, including the northern Algonquin and Montagnais, this was not the case with their Iroquoian neighbours (Jameson 1909:47). Early Dutch trade was primarily with the Mahican and only occasionally with the Mohawk (O'Callaghan 1856-57 [1]:14; Richter 1982:51). The Mohawk had been fighting with the Algonquin and Montagnais for at least a generation (Biggar 1922-36 [5]:78) and, especially early in the 17th century, seem to have suffered in the exchange (Biggar 1922-36 [2]:98-101, 122-133). In fact, according to Mohawk reminiscences recorded by the Jesuits in the 1650's, at the time the Dutch settled on the Hudson, the Mohawk were nearing "extermination" at the hands of the Algonquin, Abenaki and Susquehannock (J.R. [45]:205).

In 1622, Champlain noted that "some time ago" some Mohawk had begun trying to negotiate a truce with the northern Algonquian groups (Biggar 1922-36 [5]:77-79). In view of their weakened state, this was hardly surprising. Champlain seized the opportunity and persuaded his somewhat reluctant allies to complete the truce and begin to work out a genuine peace. The stated reason for the truce was that the protagonists were weary of fighting, they wanted to share the hunting territory between them peacefully, and the Mohawk wanted the return of some kinsmen held by the Montagnais. It is possible that the Mohawk also wanted to establish trade with the French because Fort Nassau had been abandoned in 1617 due to flooding (Jameson 1909:67-68). If this was one of the reasons for the peace it is not mentioned, nor are there any reliable accounts of Iroquois trading with the French during the truce or the succeeding peace.

Between April and July 1624, the truce between the northern Algonquian groups and the Mohawk was negotiated into a peace. While these negotiations were going on, the Dutch returned to the Hudson River and built Fort Orange (Jameson 1909:75). Immediately, encouraged by the Dutch, some of the northern Algonquian groups began to use the peace in order to travel the Lake Champlain corridor (Mohawk territory) to trade with the Dutch, not for Dutch trade goods but for wampum (Jameson 1909:70, 86; Van Lear 1924:223-224). To the Mohawk, this situation could have anything but pleasant consequences, the worst of which could be a Dutch-Mahican-Algonquin-Montagnais alliance. Later events showed that the Mohawk must have objected almost immediately to the Montagnais and Algonquin travelling to Fort Orange (Van Lear 1924:212-215), but we do not know what form that objec-

tion took.[19] Either late in 1625 or early in 1626, the Mahican attacked the Mohawk and forced them to abandon their easternmost village. This village stood about 20 leagues (ca. 40 miles) from Fort Orange, probably near the junction of the Mohawk River and Schoharie Creek (Jameson 1909:139-157). In the spring of 1626, on request of the Mahican, the Dutch commander at Fort Orange, Daniel van Krieckenbeeck, decided to join the Mahican in an attack on the Mohawk. The Mohawk were waiting for them a few miles from Fort Orange; Krieckenbeeck and three of his men were killed as well as 24 Mahican (Jameson 1909:84-85; Biggar 1922-36 [5]:208, 214). A few days later the Mohawk apologized to a Dutch trader for the death of his fellow countrymen and enquired why the Dutch were meddling in Mohawk affairs (Jameson 1909:85). Champlain saw the "affair" as an attempt by the Dutch to prevent the Mohawk from attacking the Mahican, while the Dutch saw the origin of the conflict as an attempt by the Mohawk to prevent northern Algonquian groups from travelling to Fort Orange (Biggar 1922-36 [5]:208; Van Lear 1924:212-215).

Following the 1626 fiasco, the Dutch evacuated their eight families at Fort Orange but left a garrison of 16 men (Jameson 1909:85). Apparently they had learned little from the affair because in the winter of 1626-27 they sent wampum belts through Mahican envoys to the Montagnais to solicit their aid in a war on the Mohawk (Biggar 1922-36 [5]:214-215). Over strong French objections, belts were exchanged and preparations made for war (Biggar 1922-36 [5]:21). Little of this must have been lost on the Mohawk. In June 1627, nine Algonquin took two Iroquois prisoner on Lake Champlain and began to torture them (Biggar 1922-36 [5]:222). Champlain, sensing impending disaster, suggested that one of the captives be sent home with presents and an apology. He was to be accompanied by envoys to explain what had happened (Biggar 1922 [5]:222-226). About the same time, the Mahican, now considered allies of the Algonquin-Montagnais by the Mohawk, killed five Mohawk (Biggar 1922-36 [5]:229-230). The not unexpected result of all this was that the envoys were killed and the war resumed (Biggar 1922-36 [5]:230.

In the spring of 1628 the Mohawk finally attacked the Mahican and dispersed them (Jameson 1909:89, 131). Although the Mahican retained possession of their lands and later returned to them, the Dutch realized that the Mohawk now controlled access to Fort Orange. Their hope of extending trade to the Canadian groups through Mohawk territory had become impossible as long as the Canadian groups and the Mohawk were enemies (Van Lear 1908:258). Over succeeding years, the Dutch were swept into closer relations with the Mohawk, gradually giving up any thought of being able to control them.

The Growing French Presence and Epidemic Diseases

Following their return to the St. Lawrence the French spent the first two years rebuilding Quebec and their position in the fur trade. In 1634 they were ready to begin a series of initiatives that had permanent consequences for the future of New France: a serious effort to establish an agricultural colony, and a major missionary effort in the interior.

The first settlers arrived in 1634 and by 1641 there were some 200 French in and around Quebec. Trois-Rivières was finally established in 1634, in fulfillment of Champlain's earlier promise to the Native traders that a post would be built at a traditional meeting place upstream from Quebec (Biggar 1922-1936 [3]:172, [6]:378). This post drew a military response from the Mohawk in 1641 (J.R. [21]:23, [22]:249). The establishment of the Trois-Rivières post was followed in 1642 by Montreal and Fort Richelieu (J.R. [22]:211, 247, 275-277). Both of these places immediately drew attacks from the Mohawk. Although the Mohawk had not really bothered Quebec, the settlements upstream were evidently regarded as being within their sphere of influence (Biggar 1922-1936 [1]:137,

[19] Trigger (1971:279) states that the Mohawk attacked the Mahican in 1624. However, I could not find any documentary confirmation for such an event in 1624. The earliest fighting recorded by the Dutch was not until late in 1625 or early in 1626. Champlain was of the opinion that the Dutch-Mohawk-Mahican war began two years before 1628 (i.e. 1626) (Biggar 1922-36 [5]:308). The earliest attack by the Mohawk on the Mahican seems to have been in 1628. In the earlier skirmishes, including the Dutch-Mahican defeat of 1626, the Mohawk do not seem to have been the aggressors.

[3]:31; J.R. [29]:149; Blair 1911:42-43). Attacks on Native traders along the upper St. Lawrence became more frequent and assaults on French settlers a common occurrence. In 1647 Fort Richelieu had to be abandoned and Montreal barely existed with 50 inhabitants (J.R. [24]:223, [27]:81, [45]:219).

In 1632 the Jesuits assumed all missionary work on the St. Lawrence when Cardinal Richelieu prohibited the return of the Recollets. French travel to the interior was discouraged except for the Jesuits, their servants and, after 1643, a few soldiers sent to protect them. This policy suited both the colonial administration and the Native traders. French efforts could concentrate on settlement and operation of the trade at the St. Lawrence posts; the interior Jesuit missions could function outside of secular interference and the various Native traders could continue the interior trade through their traditional channels without French competition. It was official policy that would not change appreciably until 1681.[20] Initial Jesuit concentration on the Huron was understandable. The Huron were sedentary agriculturalists, well disposed to the French, with wide political and trade relations in the Great Lakes area. A Christian community among them could serve as a base for further missionizing through existing Huron inter-tribal networks. Unlike the Recollets who felt that Native culture had to undergo a complete change to achieve Christian ideals, the Jesuits evolved a policy that sought to replace or eliminate only those customs that were incompatible with Christianity.

The Jesuits began their first permanent mission among the western villages of the Huron in 1634. In 1639, under the guidance of Father Jerome Lalemant, Sainte-Marie was built as a central mission not only to the Huron, but also, it was hoped, to other Native groups in the Great Lakes area (J.R. [16]:249, 253, [19]:125). From this center the missionaries were assigned as parish priests to the principal Huron villages, in some of which churches were eventually built to serve the fledgling Christian communities. As Jesuit personnel grew and opportunities permitted, other missions were opened to non-Huron groups (Harris 1987: plate 34).

The year that the Jesuits entered Huronia epidemic diseases followed them from the French settlement (Harris 1987: plate 35). Not only did these epidemics devastate the Huron and neighbouring groups, but increasingly the French, and in particular the Jesuits, were blamed as carriers, or worse, as having caused the diseases deliberately. Huron responses to the epidemics varied. Some wanted to kill the priests and sever all relations with the French. Others argued that the French alliance, dependent on the continuance of trade, was too important (J.R. [12]:243-255, [13]:215-217, [15]:17-67, [20]:27-31). By 1641, when the diseases had run their course, the Huron had lost about half their population (J.R. [17]:223). It is likely that neighbouring groups, including the Iroquois, had fared no better. Hardest hit were the elderly and young children: the one segment representing the repository of knowledge and the leaders of society, and the other segment representing the hope for the future. Among the Huron, factions began to polarize into those who wanted to end the French presence and those who wished to retain it. The latter increasingly drew their strength from the Jesuits, who now began to make genuine progress in Native conversions.

Shaky as Native-French relations were, trade continued through the 1630's. Sporadic Iroquois raids occurred into Huronia, especially by the Onondaga, while the route between Trois-Rivières and the lower Ottawa River was raided principally by the Mohawk. The main aim of these raids seems to have been traditional in nature. They were a means for a warrior to prove himself or a means to avenge past raids. Invariably these raids resulted in the death or capture of people. On some occasions furs may have been taken as well as captives when raids were launched against Huron traders. Huron raids on the Iroquois occurred with similar aims but with much lower frequency; clearly the Iroquois were growing in power.

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[20] In 1681 the interior trade was opened to French traders through a licencing system. Before that time it was illegal for the French to travel and trade with Natives west of Montreal. Those who traded illegally were called *coureurs de bois* (Eccles 1959:90-91).

Ascendency of the Iroquois

Beginning in the late 1630's, and increasingly through the 1640's, events in the Great Lakes area were shaped by the Iroquois. Whether by design or accident the result of Iroquois actions led to the total destruction of the French-Huron trade network and dispersion of all the Native societies within the orbit of the St. Lawrence colony. By 1653 the entire Native geography of the Great Lakes had been reshaped (Harris 1987: plates 35 and 37). Although the results of the Iroquois actions are clear, as are the methods they used, the reasons for their successes are less clear and their motives open to considerable speculation.

The principal factor responsible for the ascendancy of the Iroquois and the shift in the balance of power in the lower Great Lakes, was their acquisition of muskets. By the late 1630's the Mohawk were obtaining some muskets from illegal Dutch traders as well as from English traders on the Connecticut River (Jameson 1909:273-274). In 1639 the Dutch West India Co., which had obeyed Dutch strictures against the sale of arms, lost their monopoly and the illegal sale of muskets escalated. Concerned over the arming of the Mohawk, the Dutch reissued an ordinance in 1641 to prohibit such sales (Van Lear 1908:565-566). Although the Mohawk had access to Dutch trade goods, they did not have the security of a treaty and now saw their supply of arms drying up. This led them in 1641 to attempt the negotiation of a peace treaty with the French. To the Mohawk this peace was contingent on obtaining a supply of muskets and the exclusion of French Native allies from the negotiations (J.R. [21]:29-59). These were demands to which the French could not agree. Governor Montmagny, seeing that some of the Mohawk were armed, now decided to sell muskets to baptized Native allies (J.R. [24]:291, [25]:27). The collapse of the peace talks and the establishment of Montreal and Fort Richelieu on the Mohawk frontier resulted in a flurry of attacks that closed the trade routes to the St. Lawrence (J.R. [21]:61-67, [22]:269-273, 277, [23]:35, 267-269, [24]:273-293). These raids also began the dispersal of the *Onontchataronon* and the Ottawa Valley Algonquins (J.R. [22]:249, 269, [24]:267, [26]:303, [27]:37). War with the lower Hudson River tribes, particularly the Esopus, and recognition of the unlikelihood of trade with any Native group beyond the Mohawk, finally drove the Dutch to a treaty with the Mohawk in 1643 (Jennings 1984:53; Trelease 1960:60-84). The Mohawk helped to mediate Dutch-Esopus differences and for a while traded freely for Dutch muskets of which they had at least 400 by 1644 (O'Callaghan 1856-1887 [1]:150). At the same time, the Huron were said to have no muskets (J.R. [24]:271-273).

To the French and their allies the early 1640's had been fraught with difficulties. Virtually every summer the western Iroquois raided the Huron and carried off captives. Constant harassment of Native travellers along the Ottawa River and Upper St. Lawrence led to a significant drop in the furs brought to the *Compagnie des Cent-Associes*. Although captives and a few furs were taken by the Mohawk, of greater importance to the French was that their Native traders had become afraid to travel the route.[21] Between 1642 and 1644 few furs got to the St. Lawrence and the *Compagnie des Cent-Associes* teetered on the verge of bankruptcy. In 1645 they turned over the monopoly to the *Communaute des Habitants*, a company which included all the inhabitants of New France led by some of its prominent merchants (Trudel 1973:210-212).

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[21] It is interesting to note that of the many raids launched by the Iroquois during the 1640's only three resulted in a reported loss of furs; one against the Algonquin in May 1643 (J.R. [24]:275), and another against the Huron a month later (J.R. [24]:277). The third reported loss was in June, 1647, from the *Kichesipirini* and Huron (J.R. [30]:287-289). On the May, 1643 raid, the Iroquois left behind thirty robes of beaver because they were too laden with prisoners. "Goods" were reported lost on two raids against Huron returning from the St. Lawrence in August, 1643 (J.R. [26]:237) and April, 1644 (J.R. [26]:33). It was the raids of 1643 that inspired the oft quoted statement that the Iroquois raided the Huron to steal their peltry (J.R. [24]:271). Of the 36 Iroquois raids on the Huron and Algonquin recorded between 1639 and 1649, only the five above resulted in a reported loss of furs or goods, yet all of the raids resulted in the killing or capture of people. Going strictly by the evidence, it would be fair to conclude that looting was a by-product of raiding and that the prime motive for this activity was not economic gain, but rather the pursuit of more traditional motives, such as the killing and capture of people (Brandao 1986).

On the initiative of Governor Montmagny the French entered into peace negotiations with the Mohawk in 1645 (J.R. [27]:229-305). Negotiations for the treaty as well as intelligence gained by Father Jogues while in Mohawk captivity for 14 months (1642-1643), permitted the French to gain some insights into Mohawk attitudes and aims. It is fairly clear that the Mohawk regarded themselves as the mediators in any negotiations between Europeans and the rest of the Iroquois tribes (J.R. [29]:57). It is probable therefore that what Father Jogues learned from them was part of a larger Iroquois policy enunciated here to a European for the first time. Their long term goal, in Father Jogues' estimation, was "...to take if they can, all the Hurons; and, having put to death the most considerable ones and a good part of the others, to make them both one people and only one land" (J.R. [24]:297).[22] Whether by careful design or not, these precise goals were achieved by 1653, when the Iroquois tribes defeated and assimilated a large part of the Huron, Petun and Neutral, followed by the Erie in 1656.

It is not known when the Mohawk first conceived these aims, but by 1643,[23] when they were first reported to Father Jogues, Iroquois depopulation due to the epidemics and constant warfare must have imparted a sense of urgency to their fulfillment. In fact, the loss of people through warfare and disease was reported by some later observers as a major motive for Iroquois warfare (Arnaud and Suard 1804:446; Fenton and Moore 1977 [2]:99). As Raudot reported, these losses had to be replaced by the taking and adoption of prisoners, whether the losses had occurred because Iroquois were "...killed in war or died of disease in their lodges" (Dickson 1980:199). It seems more than a coincidence that the Iroquois wars became more intense, with the large scale taking of prisoners, after the end of the smallpox epidemics during the 1640's and early 1650's.

Of more immediate concern in 1645 was what the Mohawk could get out of a peace with the French. Dutch unease about arming the Mohawk, reinforced by strong protests from the French government, prompted them in 1645 to re-enact their earlier prohibition against the sale of muskets (Van Lear 1974 [4]:256-257). This was done in the face of Mohawk help in the war against the Hudson River tribes and another firm treaty made with the Dutch that same year (O'Callaghan 1856-1887 [13]:18). The possibility of a treaty with the French was an opportunity for the Mohawk to play the two European powers off against each other. The treaty was also an opportunity to regain Mohawk captives taken by the French and their allies. Finally, in making the treaty the Mohawk gained or regained hunting opportunities in the St. Lawrence - Ottawa River area through treaties made with the French Native allies (J.R. [28]:279, 287, 299). It was a great opportunity for the Mohawk to drive a wedge into the French-Native alliance system, at the same time expanding their trapping and hunting areas by peaceful means. On their part, the French thought they could retain their Native alliance system, stop the wars that were destroying the trade, and draw the Mohawk into their orbit of influence.

Although the other Iroquois tribes were not involved, the Mohawk peace opened the trade route to a record 30,000 pounds of fur in 1645 (J.R. [27]:85, [29]:247), an amount that was exceeded the following year (J.R. [28]:141). Late in 1646 however, the peace was shattered by the murder of Father Jogues who had come to open a mission to the Mohawk (J.R. [30]:219-221). Although the immediate reason for his death was that some Mohawk, goaded by Huron expatriates, accused him of having caused a recent epidemic and crop failure (J.R. [30]:227-229),

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[22] The theme of "one people and one land" comes up repeatedly in Iroquois negotiations with other Iroquoian speakers. When the Mohawk were negotiating for the remnant Huron near Quebec in 1656 the Huron were asked to join that "... they might inhabit but one land, and be but one people with them" (J.R. [43]:187). As late as 1710 Antoine-Denis Raudot wrote that the Iroquois "...used all their skills to persuade other nations to yield to them and join them. They send gifts and the most qualified men of their tribe to speak and make known that if they do not join them they could not avoid being destroyed and those who fell into their hands would suffer the most cruel tortures" (Dickson 1980:195-196). Like other 17th century writers Raudot stated that this was the manner by which the Iroquois "increased their numbers," and that firearms gave them the means to do it. L. Morgan (1851:76) records that according to Iroquois tradition, the Erie and Neutral were "offered the alternative of admission to the League, or extermination."

[23] Hale (1883:88-98) and other writers have suggested that such a policy had been a long term goal of the Iroquois Confederacy and may have originated at the time the Confederacy was founded.

it is more likely that the peace arranged in 1645 had not turned out as the Mohawk had hoped. Algonquian resistance to Mohawk hunting parties in their territory and opposition to the peace by the other Iroquois tribes led to the renewal of hostilities and Father Jogues' death.

In 1646-47 the remaining Ottawa River Algonquins were dispersed by the eastern Iroquois. These were followed by the *Aondironnon*, a Neutral group, who were defeated by the Seneca (J.R. [33]:81). In 1647 the Huron did not come to trade at Quebec (J.R. [30]:195, [32]:29, [33]:69), but in 1648 they did, led by five chiefs and warriors (J.R. [32]:97, 179, 185). Along the way they defeated a Mohawk war party (J.R. [32]:97, 179-185). While they were away, a Seneca and Mohawk force struck eastern Huronia, destroying two villages and taking 700 captives (J.R. [33]:81, 83-89, 99, 167, 269, [34]:87-99). That same year the Dutch lifted their stricture on arms and appeared to have sold another 400 muskets to the Mohawk with the tacit understanding that they be used against French Native allies (Jennings 1984:99). In March 1649, a well armed force of 1000 Seneca and Mohawk invaded the Huron country (J.R. [34]:123-137). Following their successes against the Huron, they hit the southern villages of the Petun in December (J.R. [35]:107-171). Under continuing pressure during the spring of 1650, most of the Huron and Petun decided to evacuate their homeland. Some Huron who decided to stay were defeated by an Onondaga war party in the winter of 1650-51 (J.R. [36]:123). During these wars about half of the Huron population perished (J.R. [35]:195). While the remnants of the Huron and Petun were being dispersed in 1650, the Iroquois attacked the Nipissing (J.R. [35]:199-201) and the Neutral (J.R. [36]:119, 141, 177-179). Most of the Iroquoian speaking survivors settled among their conquerors. About 300 Huron moved to the French near Quebec and another 500 to 1000, most of them Petun, fled westward. An unknown number settled among the Erie and Susquehannock. Threatened by attack, the Algonquian bands of Lake Huron also fled westward. The refugees ultimately settled in the Green Bay area and along the south shore of Lake Superior. By 1653, southern Ontario was largely deserted.

Conclusions

Most 20th century scholars have attributed the major cause of the Iroquois wars to the ramifications of an expanding European-Native fur trade (Innis 1962:23-42; Hunt 1960; Tooker 1963; Eccles 1969:53; Trigger 1985:259-273). The most recent variant of such an economic explanation holds that Native societies became rapidly "dependent" on European goods and that the Iroquois, unable to acquire "...enough beaver pelts to satisfy their growing demand," engaged in a genocidal war with the Canadian groups to rob them of their furs and acquire their fur-bearing territories (Trigger 1985:260). Attractive as such an economic explanation for Iroquois behaviour might be to modern readers accustomed to wars for alleged economic reasons, such a cause is not given in any clear-cut manner by any of the 17th century witnesses to these events. One must therefore conclude that either the 17th century observers could not interpret what they were seeing or hearing, or that there is something wrong with such an economic explanation. Was the Iroquois conquest of the Canadian groups a deliberately planned event to gain hunting territory, or was it the by-product of some other motives? Are scholars confusing the results of actions with original aims?

It is quite clear that the protagonists of the 17th century wars were fighting each other before Champlain arrived in 1603.[24] The traditional motives were proof of manhood, blood feuds, revenge and taking of captives. In the process of fighting some villages were burned and unsafe territory was abandoned. Loose alliances were formed to combat mutual enemies. Trade between allied groups was seen as a means of acquiring goods but also as a means to maintain alliances. The French and Dutch settled among Natives of opposing alliances. The French, in order to secure their colony and trade, naturally supported their northern trading partners. The Dutch, who initially sided with the Mahican, were forced into a southern alliance by the Mohawk. Through the 1620's and 1630's, both the Huron and Mohawk, the most powerful groups in their respective alliance systems, tried to consolidate and protect their special relations with the European traders and administrators from other Native groups. The Europeans, on the other hand, would have preferred to have had unimpeded relations with all natives. During the late 1630's and through the 1640's, the war intensified with the Iroquois becoming increasingly the aggressors. Was this a war to

[24] In 1622 an Iroquois told Champlain that the wars "had lasted for over 50 years" (Biggar 1922-1936 [5]:78).

gain hunting territory because Iroquois fur-bearing areas had become depleted or inadequate to meet Iroquois demand? Although Dutch records do not indicate a decline in their fur intake and often mention that animals were generally available in the Native lands surrounding their colony,[25] there seems to be little question that the Mohawk at least, were trying to regain and perhaps expand their hunting territory in southeastern Ontario and southwestern Quebec. Their presence was consistent in that area whether by raids or by treaty. But this behaviour does not explain the depopulation of the eastern Great Lakes.[26] Contemporary writers felt that the balance of traditional warfare was upset by the trade of muskets to the Mohawk.[27] It was a trade forbidden in New France except after 1641 to a few Christian converts. The Mohawk, assured by a firm alliance with the Dutch and a growing supply of firearms, of which they and their allies had possibly 800 by 1648, seized the chance to destroy their old enemies. Their ideal of combining all their neighbours into one Iroquoian people in one land and the necessity of replacing their population, depleted by epidemics and warfare, seem to have been major contributory motives. These were aims stated by the Iroquois and European observers that the Iroquois actually achieved.

The weak response of the Huron and their allies is partly attributable to their inability to respond collectively to the rapidly escalating crisis of the 1640's. Militarily, they were not as well organized as the five Iroquois tribes. The Neutral and Petun, although they were ultimately victims of the wars, did not participate in them until it was too late. The Huron were badly divided between Christian and traditionalists, the latter of whom had some Iroquois

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[25] In 1645 an Iroquois spokesman declared that: "Our country is well stocked with fish, with venison, and with game; it is everywhere full of deer, of elk, of beavers" (J.R. [27]:261). Dutch statements to this effect are in Jameson (1909:147, 173, 221) and Van der Donck (1968: 47, 97-98). Between 1624 and 1635, the Dutch took an average of about 6700 beaver and 750 otter per year at Fort Orange (Laet 1841:385). A take of 8000 pelts was considered to be a good year (Van Lear 1908:334). In 1640, Van Rensselaer estimated an average take of 5000 to 6000 beaver at Fort Orange over the previous 15 years (Van Lear 1908:483). From his eight year residency at Rensselaerwyck near Fort Orange, Van der Donck (1968:97-98, 111) estimated that "...in the New Netherlands, and in the adjacent country, about 80,000 beavers have been killed annually." It is likely that by "adjacent country" he was including Canada and New England. At any rate, the testimony of a man who had "handeled and exchanged many thousand skins" (Van der Donck 1968:111) is worth considering when he wrote in the 1650's that although the hunt had "...already continued for many years, the numbers brought in do not diminish" (Van der Donck 1968:98). What all this seems to indicate is a fairly steady intake of furs over the 1620's and 1630's and perhaps an increase in the 1640's. There are no clear-cut statements that the Dutch-Iroquois fur intake was declining or that the Iroquois had to go outside their normal hunting range for beaver until the late 1660's and early 1670's.

[26] There are no contemporary references that the Iroquois were bent on a conquest for hunting or trapping territory. In fact, there are many references through the 17th and 18th century that this was not the aim of Native warfare. For example, in 1664, Pierre Boucher, who had just been through the Iroquois wars wrote: "The wars they wage against each other are not for conquest of territory, nor for personal aggrandizement, nor yet for the furthering of their interests in any other way, but merely for revenge and they do not make any profession to the contrary..." (Montizambert 1881:62).

[27] Complaints about the sale of Dutch muskets to the Mohawk begin in 1641 (J.R. [21]:119) when 36 Mohawk so armed appeared at Trois-Rivièr es (J.R. [21]:37). By 1642 there was some thought by the French that they should attack the Dutch who were selling arms. Plans were shelved for fear the Dutch would trade even more (J.R. [21]:269-271). Governor Montmagny however, sent strong protest to the Dutch (Charlevoix 1744 [1]:362). By 1643 the Mohawk had 300 muskets, and demonstrated that they knew how to use them effectively, while the French Native allies had few or none (J.R. [22]:251, 267, 269, 307, [24]:271-273). In 1644 the French felt that the Iroquois had achieved "the advantage over them (French Native allies) through the arquebuses that they obtain from certain Europeans" (J.R. [26]:71; Jameson 1909:274). It was an advantage that was to increase over the years (J.R. [26]:231, [31]:27) culminating in 1649 when about 1000 Iroquois "mostly with firearms" obtained from the Dutch destroyed the Huron (J.R. [34]:123). In 1652, a Montagnais blamed the Dutch musket trade for the destruction of his people (J.R. [38]:67).

sympathies. Moreover, when the Huron fought, they almost always did so on a village basis rather than a tribal or multi-tribal level as did the Iroquois in the late 1640's. The Huron also may have been weakened by the absence of some men each summer away on trade expeditions. Arms to the Huron could have rectified the shifting balance of power but the French never quite trusted their allies enough to supply them, especially those Natives who rejected Christianity. French soldiers were on occasion sent to protect the Huron fur brigades but the few that were in New France were needed in the colony. Perhaps the greatest weakness of the French allied Natives was their inability to act together. This weakness permitted the better armed and better organized Iroquois to destroy them piecemeal.

A growing "dependence" on trade goods is often given as an explanation for both the Huron defeat and Iroquois aggression.[28] If there was any dependence at all, it was Mohawk dependence on Dutch muskets, powder and shot to pursue their traditional enemies more successfully and to further their broader aims of replacing their population losses and creating "one people" in "one land." Generally, European trade goods made life more agreeable for those who had them. They were desired goods, but there is no evidence that they had engendered "dependence" on the Europeans at this time in the sense that a discontinuance of trade would have resulted in a life-threatening situation. It is speculative, unproven and inconceivable that the knowledge to make traditional tools would have been lost in less than a generation. The European trade brought the Mohawk and Huron prestige in their respective spheres of operation; it brought useful and durable goods to those who received them, but it also brought disease, and to the Huron, disunity. Trade with the French continued not because the Huron and others were dependent on trade goods; it continued in spite of the epidemics because the Huron's only hope of survival as an entity was within the French alliance. To kill or eject the Jesuits and sever the French trade would have meant an end to the alliance and Huron ruin in the face of growing Iroquois power. Their hope for survival lay in a supply of firearms as well as vigorous French military support. Neither of these was forthcoming because in the end the French alliance proved to be militarily ineffectual.

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[28] The word "dependence" is rarely well-defined, if at all, by scholars who use it in their descriptions of 16th and 17th century Native Canada. For good definitions, see Thistle (1986:85-86) and Krech (1984:137-142).

CHAPTER 16

ARCHAEOLOGY OF SOUTHERN ONTARIO TO A.D. 1650: A CRITIQUE

JAMES V. WRIGHT

Introduction

When the editors left me to my own devices regarding the thrust of the final chapter in this volume, I had originally planned to provide a general overview touching upon the history of archaeological research in southern Ontario, analytical and theoretical trends, and where I thought these developments were taking us. These matters, however, are either explicitly or implicitly treated in the various chapters. Therefore, the most constructive contribution that can be provided here is to offer a critique of the preceding chapters. Since any critique is "personal," the validity of the alternate interpretations of the evidence presented here, as well as particular emphases, will have to be judged by the reader relative to those presented in the various chapters.

Archaeological syntheses are an essential process in the advancement of knowledge pertaining to past societies. The attempt to bind an array of facts and propositions of variable conviction and theoretical rigour into some form of cohesive system assures that all syntheses are premature. Critiques of syntheses, whether they be regional, national, or continental, raise controversies and thus, can be useful in the preparation for eventual new syntheses, but only when the criticisms are constructive. I am well aware that "constructive" is a relative word and that personal interpretative inclinations inevitably will creep into any critique. In this particular exercise there was the substantial problem of attempting to provide, in a relatively limited number of pages, a more or less balanced critique of some 500 pages produced by 20 scholars. To accomplish this task I have commented directly upon each chapter as it appears in the volume. General issues are focused upon while not ignoring the details, for details are the foundation of any synthesis. The reader should recognize that the following comments are to be viewed as an addendum of supplementary "other thoughts" relative to each chapter. With rare exceptions the level of scholarship in this volume has been of a high standard.

Discussion

The brief introduction by Ellis (Chapter 1) outlines the limitations in the early historic record pertaining to the Native people of southern Ontario and the role of archaeology in rectifying this inadequacy. The task of adding as much as 12,000 years to the human history of southern Ontario has to be regarded as a major responsibility of the discipline of archaeology. The need for a synthesis of the prehistory of southern Ontario is noted, particularly in light of the relatively recent contributions of cultural resource management activities to the archaeological data base. While it is appropriately advocated that the boundary of "southern Ontario" be kept flexible in order to accommodate the archaeology, it is regrettable that greater emphasis could not have been placed upon viewing the prehistory of southern Ontario relative to neighbouring regions. As will be noted, some of the papers do suffer from a limited geographical scope; particularly with reference to developments to the north and northwest and adjacent New York state. Given the strategic location of southern Ontario to the Mississippi and St. Lawrence drainage basins, including the upper Great Lakes, and the number of climatically determined environmental zones involved, it should be no surprise that this region's prehistory cannot be fully appreciated divorced from developments in northeastern North America in general. To be fair, however, such an approach would likely require a volume twice the size of the current one.

Most appropriately, radiocarbon dates presented in this volume have been converted to calendar years following Klein et al. (1982), although a number of chapter contributors have followed Timmins' (1985) modification of the aforementioned calibration tables. This reliance is inappropriate since Timmins' methodology is mathematically flawed and thus, it is improper for others to adopt his approach to radiocarbon date calibrations. Basically, Timmins' calibrations are arrived at by taking the mid-point of the Klein et al. calibration date ranges, treating this mid-point as a calendrical date, and reducing the two sigma error factor of the original calibration ranges to a one sigma error. However, the construction of the Klein et al. calibration tables involved a number of mathematical assumptions and tests. Thus, the various factors that have been incorporated into the calibrated ranges tend to skew distributions, and for this reason it is specifically stated that "An advantage to specifying an interval, rather than a mid-point and uncertainty, hinges on the fact that many confidence intervals are asymmetrically related to the value obtained from simply calibrating the C-14 date without consideration of uncertainties" (Klein et al. 1982:104-105). While I am in complete agreement with Timmins' recognition of the absolute necessity to calibrate radiocarbon dates in order to accommodate fluctuations in the production of atmospheric carbon-14, he has inserted a degree of preciseness which the method is simply incapable of supporting.

I also would take exception with the position stated in the first chapter that, given the mass and complexity of the archaeological record, it is almost impossible for a single scholar to have sufficient control of the database to produce a synthesis and, therefore, it is necessary to have a group of specialists address the task. I would suggest that, if archaeological data are published with appropriate attention to detail, said information can form the basis of syntheses by individual scholars, whether the synthesis be regional or continental. The value of such syntheses, of course, will depend upon the skill of the author, the nature of the accessible archaeological record, and the general purpose of the synthesis and the audience(s) being addressed.

Karrow and Warner (Chapter 2) have produced a succinct, readable, and diagrammatically rich synthesis of the geological and biological history of southern Ontario. The reconstructed paleoenvironments, albeit admittedly speculative, will be particularly useful to archaeologists. Certainly events such as the fluctuating water levels of the ancestral Great Lakes have a very direct impact upon the visibility of the archaeological record. Also, the economic impact of changing biological environments for hunters and gatherers, as well as horticulturists, cannot be properly assessed without an adequate understanding of the pertinent biological conditions extant during any particular time period. The geographic location of southern Ontario made it particularly subject to significant geological and biological change through time. The perceptive observation that the differences in the Holocene vegetation of southwestern and southeastern southern Ontario could have impacted upon the economies of Native peoples (p.29) is, in my opinion, clearly supported by the archaeological evidence from Archaic times onward, which indicate a basic east-west regional cultural differentiation in southern Ontario; although I would argue that the Niagara Escarpment, at 79 degrees W. longitude, was the major boundary, rather than the suggested 77 degree W. longitude boundary. I should note here that, in terms of geography and cardinal points, I treat southern Ontario as that part of the province organized into counties, as opposed to the districts of northern Ontario, and then apply the appropriate cardinal directions. Common usage, whereby southwestern Ontario means west of Toronto, is descriptively inaccurate.

I have only one major criticism of the contribution by Ellis and Deller (Chapter 3), which is otherwise a good chapter on the Paleo-Indian archaeology of the region. This relates to lumping two distinct historical events under the rubric Late Paleo-Indian I. These historical events are first, the transition from a Fluted Point culture to an indigenous southern Ontario "Early Archaic" (Hi-Lo), equivalent to what was taking place further south with the Dalton transition from the same Fluted Point culture base; and second, a western Plano culture thrust eastward to the Atlantic coast that occurred immediately to the north of the indigenous Early Archaic occupants of southern Ontario and the northward-spreading southern Early Archaic people of the Appalachian Plateau, who would co-occupy southern Ontario. The issue of whether to call Hi-Lo and Dalton materials Paleo-Indian or Archaic is a taxonomic matter, but the historical events suggested by the archaeological evidence outlined above has little to do with taxonomy. The interplay of technological regionalism, innovation, population movements and cultural mergers, in conjunction with rapid environmental change, created an extremely complex situation for archaeologists to unravel. At this point it does appear that while Early Archaic people to the south were progressively adapting to deciduous forest environments, to the north, in a narrow band of Lichen Woodland and Boreal Forest (McAndrews et al. 1987),

people were able to maintain an earlier way of life. People do not live in a vacuum, however, as indicated by the direct association of Plano and Early Archaic implements at a number of sites in the upper Great Lakes region.

There does not appear to have been any application of use-wear studies to assist in determining stone tool function in this chapter, and it is difficult to accept the suggestion put forth that the late Fluted Point culture feature at the Crowfield site was a cremation (p.52), given the lack of calcined remains, and since the only documented Fluted Point culture burials, from a site in Montana (Canby 1979), were in-flesh burials. Finally, one can question the suggestion that early lanceolate projectile point varieties, such as Holcombe and Plainview, can be equated with the late Plano obliquely ripple-flaked points of the upper Great Lakes (p.61).

The Archaic Period (Chapter 4) is critical to the understanding of the prehistory of southern Ontario, since it was during this period that much of the groundwork for subsequent developments was laid. The authors have handled this task creditably, particularly given the paucity of single component sites available for study. It is interesting to note that throughout much of the Archaic Period, as well as the earlier portion of the subsequent Woodland Period, the Niagara Peninsula appears to be more closely affiliated with New York state than Ontario.

Some general criticisms of the chapter include its over-emphasis on comparisons to the south, rather than looking to the north and northeast. Also, I am not convinced of the merit of defining cultural constructs, such as the Laurentian Archaic, on the basis of a limited number of relatively rare "index fossils" (p.84), rather than the dominant, if simple, chipped stone tool kit. I would also add that, while some population growth likely did take place through time during the Archaic Period (p.66), it is also almost a certainty that increasing sedentism at favoured, seasonally resource-rich sites, in conjunction with environmental stability, has contributed to an over-emphasis on population growth by archaeologists, while population coalescence may actually have been a more important factor. As well, the appearance of notched projectile points (p.71), which initiate the beginning of the Archaic Period, could have been given more consideration in this Chapter, relative to technological implications. Projectile point varieties, such as Hi-Lo, have far more in common with other Early Archaic point varieties than they do with the preceding Paleo-Indian points, which could lead one to speculate that they reflect the innovation and rapid spread of a markedly different weapon system. I believe this new weapon system was the spear thrower, and that it largely replaced the thrusting spear -- a diffusion process that took 3,000 years to reach northwestern North America.

Other points worth raising include: the suggestion that gouges and adzes on certain sites are indicative of canoe manufacture (p.91), which, while in itself questionable, also ignores settlement pattern evidence going back to Paleo-Indian times, suggesting that some form of portable watercraft was in use when people first moved into southern Ontario. Also, it should be mentioned that the DbEj-11 site on the north shore of the St. Lawrence River (Archambault 1987), can be regarded as a Maritime Archaic (see J. Tuck 1978a:32-34) site, and not Laurentian Archaic, raising the issue that some of our criterion for cultural assignments are somewhat superficial. Also, just as the authors question whether a Narrow Point culture ever existed in southern Ontario (p.98), it is probable that the Broad Point Archaic represents a diffused technological element and thus, both of these constructs should be very much held in abeyance pending when and if they are recovered in a clear assemblage context. With reference to the function of "wedges," it is worth noting that use-wear studies in other areas of the country suggest that they were actually a simple form of burin used for a range of slotting and scraping functions (J. Wright 1972f:9). Contrary to the suggestion that the Knechtel I site did not represent a spring seasonal camp site (p.118), is the fact that the site faunal collection was dominated by the remains of spring to early summer stream and shallow water spawners such as channel catfish, walleye, and sucker. In terms of trade in galena (p.118), it is worth noting that the lead sulphide from the Glacial Kame Finlan site in eastern Ontario (Farquahr and Fletcher 1984) was sourced to the Mississippi River region near Galena, Illinois. Finally, in my opinion, for those areas outside of the Niagara Peninsula region, the vast majority of projectile points that tend to be identified in the literature as Lamoka (p.119) have been classified on the basis of outline, but lack the requisite attributes for such an assignment.

The following chapter (Chapter 5), on the Early and Middle Woodland periods in southern Ontario, raises one major problem which, in my view, requires a change in operational theory. In this chapter the authors follow the traditional, unilineal theory that the Early Woodland, with its simple cord impressed and plain pottery, came first; fol-

lowed later in time by the Middle Woodland, with its more elaborate dentate and push-pull decorated pottery. However, one can point to a body of evidence which suggests that these two ceramic assemblages are essentially contemporaneous and, in large part, geographically discrete. To the south, Vinette 1, Fayette Thick, Schultz Thick, Black Sand, Marion Thick, etc. corded and plain pottery with occasional incising, extends from the Atlantic Coast to North Dakota. To the north, at approximately the same time, the dentate stamped and dragged-stamped pottery extends in a parallel fashion from the Atlantic Coast to eastern Manitoba. In both cases these pottery complexes, most reasonably interpreted as the products of stimulus diffusion from further south, were incorporated into the technologies of indigenous Archaic people.

The preceding scenario of two independent, but essentially contemporary, stylistic complexes of pottery with basically different geographical distributions being adopted by regional Archaic Period populations is suggested by stratigraphic evidence, radiocarbon dates, and direct association. A complicating factor which has masked this scenario is that southern Ontario sits right on the boundary between these two ceramic complexes. As a result, there is not only mixing of the two styles on certain sites, but it would also appear that the Niagara Peninsula, and possibly other regions of southwestern southern Ontario, actually participated first in the southern ceramic style. This interplay between the two pottery styles likely reflects female mobility among related as well as unrelated peoples. Saugeen and Meadowood pottery, for example, occur on the Heron Bay site, a Laurel site on the northshore of Lake Superior (J. Wright 1967b), while Laurel and Meadowood pottery occurs on the Donaldson site (J. Wright 1963) in direct association with the dominant Saugeen cultural materials.

Such a bilineal theory of Early and Middle Woodland ceramic origins with concomitant blending along the respective boundaries of the two pottery styles may be difficult for some to accept but, in my opinion, it is the only way than an increasing body of stratigraphic, radiocarbon, and geographic distributions and associations during the early part of this Woodland Period can be explained. It is quite possible that the Wyoming Rapids site (I. Kenyon 1979c) reflects an accurate stratigraphic situation, in that the southwestern-most part of southern Ontario did adopt Vinette 1 pottery for a brief period prior to the introduction of Saugeen pottery, but this does not appear to have been the case to the north or in southeastern Ontario. Except for the early Meadowood Batiscan site (Levesque et al. 1964), with its single associated Point Peninsula sherd, the situation in the lower St. Lawrence is unclear due to the mixed nature of the cultural deposits. Regardless, Meadowood culture is still essentially marginal to southern Ontario, compared to Saugeen and Point Peninsula cultures - as even a cursory examination of the New York state versus southern Ontario stratigraphic sequences reveal.

Efforts to clarify this complex situation, however, are not assisted by the manipulation of the radiocarbon record, whereby researchers attribute Saugeen dates to Meadowood, and features lacking Meadowood materials are also assigned to Meadowood presumably solely on the basis of the dates alone (Table 5.1). The potential for confusion is further compounded by considering bona fide Meadowood culture sites in the same breath with assemblages composed of "Meadowood diagnostics" that have been extracted from mixed, multi-component sites (p.128). Meadowood culture is not a pristine culture of "index fossils," as an examination of the Batiscan site, isolated, to some degree, from component mixture by isostatic rebound, illustrates. Often the acceptable attribute requirements of the Meadowood "index fossils" can be very inclusive indeed (p.130-131). In short, it seems that some take the view that a Meadowood projectile point means Meadowood culture regardless of the fact that it came from the surface of a non-ceramic site, or was recovered in good archaeological context from a Point Peninsula or Saugeen site. Thus, the Dawson Creek site (Jackson 1980, 1983c) is essentially assigned to Meadowood on the basis of the radiocarbon dates alone, despite the fact that most of the ceramics possess Point Peninsula attributes, such as channelling. This excessive reliance upon a limited number of frequently poorly represented traits to reconstruct culture history has led, for example, to the suggestion that Meadowood culture "...expanded into areas like the Bruce Peninsula..." even though there is abundant evidence for a Late Archaic occupation of the region; clear evidence of the Archaic technology and settlement pattern features continuing into that of the subsequent Saugeen culture; and no unequivocal evidence of an intervening Meadowood occupation in the region.

Other concerns which can be raised from reading this chapter include what appear to be certain generalizations regarding Kipp Island "marker" traits in Saugeen and Point Peninsula (p.156), which are either inaccurate in their

detail or irrelevant, since the traits possess too great a time depth and spatial distribution. In addition, contrary to the position of the authors, there is very little evidence of Saugeen and Point Peninsula cultural interaction with adjacent Hopewellian people such as those in Saginaw Bay, Michigan, and what influences that do appear, such as burial mounds and grave paraphernalia, are both erratic in their distribution and attenuated in their expression. I would also add that the grave goods from the central burial of the Princess Mound on East Sugar Island, as well as certain mound construction features, might suggest an Adena (Middlesex) authorship (p.165); and that recent research suggests small marine shell beads (i.e. marginella) are not a good "temporal index fossil" for later dating assemblages (see Heckenberger et al. 1990). Finally, it is worth pointing out that the evidence for the expansion and fission of bands due to population increase (packing) is really only apparent in the Rice Lake and Lake Scugog areas, where an exceptionally rich resource base existed.

Archaeological transitional stages tend to represent relatively rapid events leaving little evidence and much of that equivocal. This problem is apparent in Fox's (Chapter 6) effort to outline what happened during this period in the prehistory of southern Ontario. Some consideration is given here to the perennial problem of identifying archaeological constructs with language groups, but it should be stressed that the Nipissing, the Ottawa River Algonkins, and the Odawa, for example, cannot be equated with the Cree and Montagnais. The former groups occupied a transitional physical and cultural environment which provided them with economic opportunities denied their more northerly linguistic kinsmen. Unfortunately, the significance of the broad buffer zone between Algonquian and Iroquoian-speaking peoples, from the Ottawa River to Georgian Bay, is not considered in this chapter, yet it constitutes one of the best regions in southern Ontario for archaeological cross-cultural studies. One can also question some of the handling of available data in this chapter. Arguments for a 13th century persistence of dentate stamping in Laurel culture, for example, are supported by questionable C-14 dates from veneer sites and ignores some contrary evidence from stratigraphy, superposition, and component separation through time by isostatic rebound. There also appears to be an indiscriminate assignment of cord-impressed vessels with a row of exterior punctates to a Princess Point-like category; yet such a designation could soon result in Princess Point-like pottery being reported from the Atlantic Coast to eastern Saskatchewan. Caution would suggest that style horizons pertaining to a single item of technology can be a shaky crutch upon which to rest cultural historical reconstructions.

The next chapter in the volume (Chapter 7) brings together the scattered information pertinent to the Western Basin Tradition of the extreme southwestern portion of southern Ontario. As is noted, more often than not this archaeological construct, with its Michigan and Ohio relationships, has either been ignored by Ontario archaeologists or lumped into an Ontario cultural construct. The evidence reviewed in this chapter indicates that the Western Basin Tradition was gradually pushed out of the province by encroaching Ontario Iroquoian Tradition people, contrary to other hypothesized scenarios (Stothers 1975b). I would add that this aggression and displacement also appears to have taken place to the north of the region under specific concern in the chapter. Western Basin Tradition ceramics, as well as the distinctive chipped slate tool assemblage, have been recovered stratigraphically under Middle Ontario Iroquoian occupations along the Lake Huron and southern Georgian Bay coasts of Ontario (W. Kenyon 1959; J. Wright 1980b).

It is worth considering that the differences between Western Basin Tradition and Ontario Iroquoian Tradition settlement and subsistence patterns, which the authors see as representing cultural differences, may arise from the possibility that the Ontario Western Basin sites may be seasonal hunt camps related to base villages on Lake St. Clair in Michigan and/or Ohio. Also, pertinent to the ethnic and linguistic identification of the Western Basin Tradition with the Central Algonquian-speaking Gens de Feu of the historic period, is the need for a comparative physical anthropological study of skeletal populations with those of the Ontario Iroquoian Tradition. Indeed, the same observation could be made for the Glen Meyer Branch of the Early Ontario Iroquoian period, which shares a number of cultural traits with the Western Basin Tradition. Expanding on the preceding point, the explanation for the apparent coalescence of populations into larger communities during the Springwells phase may not only relate to the demands of increasingly intensive horticulture, but perhaps could also be due to an influx of Glen Meyer refugees and the increasing requirements for defence in the face of progressive Ontario Iroquoian aggression. Finally, a minor complaint is that it would have been useful to have provided frequencies as well as percentage occurrences of pottery varieties.

A succinct outline of the historical development of Iroquoian archaeological research and its underlying theoretical assumptions and methods is provided in Chapter 8. It is worth reiterating the point made in this chapter regarding the need to develop data banks in order to make information from cultural resource management activities readily available to scholars. This is fundamental to the advancement of archaeological knowledge in the province. In regards to advancements in ceramic analysis, while it is agreed that there are certain advantages to incorporating attribute combinations and variables in analysis, there is still the problem with this approach of effectively considering specific vessels and still being able to see the forest for the trees, as opposed to the less precise but more pragmatic use of attribute constellations. Also, classificatory constructs, such as Glen Meyer and Huron, are always relative to the purposes and scope of any particular synthesis and do not, ipso facto, negate the recognition of internal heterogeneity within said constructs (p.288). And, while it is frequently noted (p.289) that methodological trends include computer applications, particularly involving statistical packages, there is yet little evidence of the trend in southern Ontario. A few other comments worthy of note: St. Lawrence Iroquoian development was not included with the Ontario Iroquoian Tradition (J. Wright 1966), since it represents a basically independent tradition; and it strikes me as unnecessary to divorce culture history from considerations of "...ecological-economic, social and cultural factors...," since culture history is quite capable of accommodating such research orientations and more.

With regard to Chapter 9 on the Early Iroquoian Period, it should be no surprise that I would focus on the controversy surrounding the Conquest Theory (J. Wright 1966; J. Wright and Anderson 1969), which in recent years has been rejected by researchers such as Williamson (this volume), Trigger (1985:96), and others. The conquest theory proposes that towards the beginning of the 14th century western segments of the Pickering Branch in southeastern southern Ontario replaced the indigenous Glen Meyer Branch people of southwestern southern Ontario (J. Wright and Anderson 1969:62-79). While most people have focused upon the draconian nature of this proposal, its major significance relates to the understanding of the evolution of Iroquoian social systems as horticulture increasingly became the dominant economic base and women the major food producers. If the theory accurately portrays events it would mean that even at this early time period social structure, at least with reference to the Pickering people, was sufficiently developed to permit the formation of a confederation of villages dedicated to act in concert for purposes of territorial acquisition. To form such a confederation would subsume the existence of social structure systems which cross-cut villages, such as clans and possibly even phratries, and other social links necessary to expedite major cooperative ventures. The reasons underlying a military effort of this magnitude were likely multiple. It could by hypothesized that as horticulture and the role of women as the main food producers became increasingly important, the role of the male as food provider was markedly reduced and men were forced to turn to war as a method of winning prestige -- all of this taking place during a period of exponential social change resulting from the changing economic base of the society (Trigger 1985:107-108). It could be further hypothesized that the erratic climate of the period under consideration would have impacted more directly upon the formative horticulturists of the Pickering region, who were probably in the process of developing shorter growing season northern flint corn varieties. Several poor growing seasons could have left certain Pickering groups in desperate straits and, in conjuction with a developing social structure which permitted effective cooperation between villages, led to the invasion of the more kindly endowed lands of their neighbours. This would be the reverse of the usual pattern of the richly endowed dominating the poorly endowed, but it is premised upon levels of social development and not resources per se. Such a hypothetical scenario could be tested by detailed intra-house, intra-village, inter-village, and village cluster settlement pattern studies.

A major criticism of this theory is that there is no apparent evidence to demonstrate a major disruption in the archaeological record of southwestern southern Ontario between Glen Meyer and subsequent developments. However, I would argue that there is a clear and demonstrable cultural discontinuity between Glen Meyer and the succeeding Uren substage (ergo late Pickering) in terms of technology, settlement pattern, and burial practices. Further, the cultural transformation in southwestern Ontario takes place so rapidly that other possible explanations, such as the massive acculturation of the Glen Meyer population, are most unlikely, particularly in lieu of any known social mechanism pertinent to the level of culture under consideration. In terms of technology, pottery attributes, as well as other ceramic, lithic, and bone traits, clearly reflect continuity from Pickering into the succeeding Uren and Middleport substages, and an essential discontinuity with the equivalent Glen Meyer aspects of technology. Gross settlement pattern distributions reveal the sudden appearance of Uren substage sites in former Glen Meyer territory. At a

more specific level, Pickering-Uren longhouses are longer and wider than their Glen Meyer counterparts. There is also some still equivocal evidence of an influx of Glen Meyer pottery into adjacent Michigan and Ohio that could possibly reflect the presence of Glen Meyer refugees (Fitting 1970:154-155). A minor degree of cultural absorption of Glen Meyer people by the Uren substage intruders in the form of both pottery and other items, such as slate pebble pendants, has been noted. The only missing major element of potential value in assessing the apparent cultural discontinuities between Glen Meyer and Uren is the physical anthropological analysis of human remains. Unfortunately there is virtually no skeletal sample of demonstrable Glen Meyer authorship except for a single bundle burial from the Stafford site, and a reported flexed burial from a Roeland site house (Williamson, this volume), and this despite extensive Glen Meyer settlement pattern excavations. In contrast, bundle, flexed, and small ossuary burials are typically encountered in Pickering sites and longhouses, and in the houses and sites of the descendant Uren and Middleport people. To bury the deceased, even temporarily, within the confines of a dwelling, or not to do so, suggests that a substantial gap existed between Pickering and Glen Meyer peoples' cultural values as they pertained to their respective views of the place of the soul in the cosmos. The basic absence of Glen Meyer burial grounds, despite extensive exploration, may indicate that the accepted method of body disposal was some form of exposure which has left no archaeological trace.

I would also add that a fundamental problem in the recognition of the cultural discontinuity between the Glen Meyer and Pickering branches and the subsequent Uren and Middleport substages is that a number of researchers appear to be unable to distinguish Glen Meyer sites from Uren and even Middleport sites. If Uren and Middleport sites are interpreted as Glen Meyer sites then, of course, there is cultural continuity from "Glen Meyer" to the historic Iroquoian communities of the region -- but Uren cannot be equated with Glen Meyer.

Finally, those researchers who argue against the conquest theory tend to refer to supporting data which invariably is present in not easily accessible sources, such as unpublished manuscripts and cultural assessment reports. It is difficult to even begin to evaluate the merit of the arguments put forth when one cannot properly assess the quality of the data cited.

The preceding issues can be enlarged upon but should suffice for present purposes. Certainly, until some of the questionable handling of basic archaeological data changes, this critical stage in the development of the Ontario Iroquoian Tradition will remain confused. This would be unfortunate given the existence of an exceptional, testable data base which is capable of shedding considerable light on how changing economic bases can affect social structure and the seeming rapidity with which some of these changes can occur.

The chapter on the Middle Ontario Iroquoian Stage (Chapter 10) maintains a balanced presentation despite involving the contributions of five archaeologists. It is heartening to see the Uren substage returned to its proper place for without it, in my opinion, the comprehension of the most significant development during this stage is essentially hamstrung. Some concerns include the suggestion that the Uren substage moved into Huronia from the south (p.322). This movement may be questioned on the grounds that the entire Pickering-Uren ceramic sequence is represented at the Frank Bay site immediately to the north (Ridley 1954), raising the probability that there are some small Pickering villages hidden in the woodlots of Simcoe County from whence this ceramic influence originated. Also, the role of a Middle Ontario Iroquoian penetration into the Niagara Frontier of New York state (Lenig 1965; Niemczychi 1984; M. White 1961) requires a more detailed consideration, particularly relative to the influences apparently exerted on developmental Seneca and Cayuga populations. Relative to the inherent limitations in the preciseness of both the radiocarbon and seriation methods discussed in this chapter, in view of these difficulties it may be well to begin looking into the feasibility of establishing regional dendrochronology charts in order to achieve the desired degree of chronological control.

Other points worth raising are that, if rolled collars are accepted as collars then most Pickering Branch vessels are collared, and if Pickering is being included in "Early Iroquoian," then one cannot have cord-wrapped stick as a characteristic decorative technique (p.330). Also, despite suggestions to the contrary (p.332), the origin of the sophisticated pottery pipes that suddenly appear in the Middleport substage is still far from being resolved. In my view, the choice of House 10 from the Nodwell site as an illustration of a Middleport substage longhouse was not

totally appropriate since this house deviated in a number of important respects (width, hearth arrangement, bunkline width) from the other houses in the village. Regarding the evidence for cannibalism, charred and boiled bone fragments, the occurrence of tools manufactured from human bone, and cut marks on human bone must all be considered in addition to context, such as human bone fragments functioning as post wedges. Finally, the shift from sandy soils to the richer loams during the Uren substage, in addition to the advantages for corn, was probably a necessity for the growing of beans and squash.

Information pertaining to Huron culture history is provided in a clear and succinct fashion in Chapter 12. It was, however, surprising to see so little done with the substantial settlement pattern evidence from the Draper site (Finlayson 1985a). Curiously, the statement on page 381 that "...periodization of Ontario Iroquoian prehistory has to a large extent gone out of fashion..." is not only contradicted by the chapters in this volume but also by the author's subsequent description of the Black Creek-Lalonde, Realignment, and French periods. The suggestion that there may have been an influx of St. Lawrence Iroquoian refugees into the Huron villages of the Trent Valley is of concern, since it ignores the evidence that the basic elements of St. Lawrence Iroquoian culture on these sites involved female technology (pottery and likely the distinctive clay beads), not male technology (pipes and likely the bone technology), suggesting that we are more likely dealing with the products of captive women rather than entire communities of refugees being adopted by friendly Huron. If the latter were the case, we would expect to see the entire St. Lawrence Iroquoian tool technology on these sites. I would also point out that the suggestion of incompatibility between certain Huron site radiocarbon dates and the seriation and protohistoric chronological estimates being caused by dating mature wood can be more simply accounted for by a faulted methodological manipulation of the Klein et al. (1982) calibration tables (Timmins 1985). It could be speculated that the clustering of longhouses into two different orientations in Huron villages may relate to phratry or, possibly, moiety groupings (p.374), although how this could be demonstrated is difficult to envision. Finally, the limited occurrence of European trade goods at the Benson site hardly supports the speculation that the high incidence of dog bones is due to the involvement of hunters in the fur trade seeking beaver instead of traditional game (p.380).

Jamieson's chapter (Chapter 12) provides a succinct summary of the culture history of the first Iroquoian peoples to have direct contact with Europeans in the early 16th century. Indeed, it is encouraging to see that the Iroquoian developments which took place to the northeast of Huronia, Petunia, and Neutralia are increasingly being given the attention they deserve. Any synthesis of the archaeology of southern Ontario would have been incomplete without a detailed consideration of these people who disappeared sometime after A.D. 1580. Not only is there physical anthropological evidence (Molto 1983:256-257) but also archaeological evidence (Pendergast 1975) of an early relationship between the Pickering Branch and the ancestors of the St. Lawrence Iroquoians. There is also the evidence of a prolonged and intense western St. Lawrence Iroquoian interaction with the Southern Division Huron. Increasingly, research is being focused upon six proposed regional groupings of St. Lawrence Iroquoian villages, stretching from the southeast corner of Lake Ontario to downriver from Quebec City (Chapdelaine 1989), while at the same time refining the culture history sequence originally established by Pendergast (1966, 1981, 1984).

I am not convinced of the suggestion in this chapter that the ceramic attribute temporal trend documented from a stratified midden at the Steward site, a seasonally occupied fishing camp (J. Jamieson 1982), provides a viable alternative to the trends established from a large number of village sites (Pendergast 1966). The salvage excavation methods applied to the Steward site and the complex nature of the stratified midden deposits conspired to raise questions regarding the validity of the suggested ceramic time trends documented for that site. Also, given the sample sizes from the three, in part, arbitrary midden layers at Steward (Unit I: 33 rims, Unit II: 55 rims, and Unit III: 47 rims), and the very great likelihood of mixture, it would be premature to reject the earlier proposed ceramic trends at this time.

Another controversial issue raised in this chapter relates to whether a major segment of the St. Lawrence Iroquoians were incorporated as captives or refugees into Huron villages to the west (p.403). Gross settlement pattern features, such as contemporary St. Lawrence Iroquoian and Huron village fusions likely reflecting defensive considerations, the existence of heavily defended frontier villages on both the eastern flank of the Huron and the western flank of the St. Lawrence Iroquoians (with an intervening 200 km buffer zone), and the fact that essentially female St.

Lawrence Iroquoian material culture items are represented on Huron villages after the disappearance of the western St. Lawrence Iroquoians (as discussed previously), suggest that some portion of these people moved west as captives, rather than as refugees fleeing to allies and friends.

Some other concerns include the notion regarding the use of the words "Iroquois" and "Iroquoian" (p.388). It is fair to point out that the word "Iroquois" was historically applied to all Iroquoian-speaking peoples, not just the League Iroquois of New York state. Also, the St. Lawrence Iroquoian materials from Pointe de Buisson cannot be demonstrated to represent a single component, and more likely represent accumulated seasonal debris (p.389). There is an error in discussing the longhouses from the Steward site, in that they were considered "wider" than village houses, not "longer." The presence of American eel faunal remains at the Steward site indicates a fall rather than spring occupation (Scott and Crossman 1973:625). Other points to mention are that earthworks and palisades also occur at the Maynard-McKeown and Beckstead sites, and that the definite use of true ossuaries by St. Lawrence Iroquoians still has to be demonstrated, despite some suggestive historical evidence (Squire 1851:29). The abundant evidence of cannibalism at the McIvor site but lacking at the nearby, contemporary Maynard-McKeown site suggests some unknown ritual factor (p.401). I would also point out that the problems with St. Lawrence Iroquoian chronology may not be as serious as suggested, since one can question the validity of Timmins' calibrations, and given the battery of dates from the McIvor site (J. Wright 1985). Finally, regarding the disappearance and destination of the St. Lawrence Iroquoians, there is no direct archaeological evidence from either Mohawk or Onondaga villages or the Abenaki, although there is apparently such evidence from historic Oneida villages (James F. Pendergast: personal communication), in addition to that from the Southern Division Huron villages.

Chapter 13 provides a coherent outline of the developments that led to the historic grouping of tribes called the Neutral. Indeed, the archaeological data available for the Neutral exceeds that of any other northern Iroquoian group. This situation can, to a large extent, be credited to the efforts of William C. Noble and his students at McMaster University. In particular, the diverse settlement pattern data, in conjuction with an exceptionally precise European trade bead chronology control, have permitted a wide range of inferences bearing on the nature of the development of Iroquoian social systems. Quite correctly, the limited basis is noted for the proposition that the historic Neutral confederacy had evolved to the level of a chiefdom, united under a supreme leader called Souharissen (Noble 1984, 1985). Indeed, if the Walker site (M. Wright 1981) was Ounontisaston, the home village of this supreme chief, then, as reflected in pottery, it is curious that the capital village of the chiefdom did not appear to be nearly as involved in the adoption of Gens de Feu females, as was the case at the Hamilton site (Lennox 1981) in the northern Spencer-Bronte Creeks site cluster. In any respect, an exceptional individual who acquires exceptional powers, possibly during exceptional times, still does not a chiefdom make.

Of interest is the increasing ability to identify regional longhouse structural differences such as the "slash pits" of the Spencer-Bronte and Fairchild-Big Creeks clusters (p.442). I would note that while the shorter longhouses of the historic period could be attributed to severe population reductions resulting from introduced disease, it might be speculated that the reduction from an average length of 62 metres in the 15th century to an average of 30 metres for most of the 16th century, may reflect some social development, such as the fissioning of clans into more manageable units relative to individual dwellings. It would have been useful if the authors had noted that the Petun, the Odawa, and even some of the Huron were apparently involved in hostilities with the Gens de Feu, or that the uneven distribution of Gens de Feu pottery on Neutral sites suggests that the various tribes of the Neutral confederacy were apparently not equally involved in this conflict to the west. A few other comments are as follows: there is no particularly compelling reason to think that the Neutral had craft specialists (p.433); and contrary to palisades also functioning as a defence against predators, I would suspect that such intrusions would constitute a welcome addition to the stew-pot (p.440). It should be noted that the reduction of deer bone from the larger villages later in the sequence could relate to necessary changes in methods of processing due to accessibility, rather than being a reflection of exploitation *per se*. Also, not only is the fruit of the black nightshade (p.452) likely poisonous (Petersen 1977:50), but the plant is not indigenous (Fernald 1970:1,253), raising the problem of recent contamination occurring in flotation samples. Finally, it might be speculated that the dual chamber ossuaries could relate to moiety or phratry reciprocal burial of different clan groups, but it is doubtful if this hypothesis could be tested using osteological discrete traits.

In a synthesis whose later prehistory and history is naturally dominated by Iroquoian-speaking peoples, it is refreshing to see Fox's chapter (Chapter 14) on the Algonquian-speaking Odawa. Given the relatively limited amount of archaeological research which has been directed to Odawa prehistory and early history, it should not be too surprising that this chapter is somewhat heavy on speculation and light in substance. The effort, however, is laudable since the close historically recorded inter-relationships of the northern Algonquian-speaking peoples with the Huron, the Petun, and even the Neutral, appears to have had deep roots that only archaeological research can elucidate. Undoubtedly the most speculative speculation in the chapter is the implication that palisaded village sites, such as Plater-Fleming (Pearce 1989) (p.466) and perhaps even the Nodwell site (J. Wright 1974), may be Odawa and not Iroquoian. While there is a good possibility of an Odawa component at the early 17th century Plater-Fleming village site, along with the Petun occupation (Garrad 1989), such a permanent, 0.75 hectare, fortified, longhouse village has not yet been demonstrated to be characteristic of either prehistoric or historic Odawa settlement pattern. Other comments are as follows: the suggestion that the majority of the Huron/Petun style ceramics from northern Algoquian sites possess "...paste and technical attributes..." indistinguishable from Iroquoian vessels and, thus, are likely trade items (p.463) certainly runs contrary to my experience with such ceramics from Georgian Bay to the northeast shore of Lake Superior; and the assumption that late 17th and 18th century historical observations concerning Odawa dwellings is pertinent to the prehistoric situation (p.470) is fraught with dangers, given the amalgam of ethnicity represented at these later sites.

Heidenreich's synthesis (Chapter 15) of the early history of the St. Lawrence - Great Lakes region presents the clearest and most precise statement on this subject matter that I have had the pleasure to read. Heidenreich moves away from the popular economic explanation for many of the events which occurred during this period (p.475), a position that is very much in accord with the direct archaeological evidence. This reflects the fact that the chapter is based "...solely on the early documents and what some of the current archaeology suggests..." (p.475). There is also the compelling suggestion that technological and social factors (lack of muskets and inability to organize an affective confederacy) underlay the destruction of the Huron and their allies by the League of the Iroquois. While I would agree the "agojuda" of the Hochelagans were likely the Huron, the "Magots" at the headwaters of the Richelieu River may have been the historic Oneida (James F. Pendergast: personal communication), since direct archaeological evidence of contacts between the St. Lawrence Iroquoians and the Mahican (Funk 1976), Mohawk or Abenaki is lacking. Also, the proposition that evidence of pre-Cartier European trade and even early post-Cartier trade is lacking again can be supported by direct archaeological evidence, in that the excavation of 6,000 square metres of the mid-16th century St. Lawrence Iroquoian Maynard-McKeown site (Pendergast 1988) near Prescott, Ontario produced only a single iron awl (J. Wright and Wright 1990). I would caution that the St. Lawrence Iroquoian pottery attributed to Onondaga sites (Bradley 1987) is, in the opinion of both Pendergast and myself, a misidentification. Finally, while the increase in warfare and the adoption of enemy people to replace losses due to wars and epidemics may have increased after the smallpox epidemics of the mid-17th century, I would add that similar events appear to have taken place during the first half of the 16th century, and at the end of the 13th century, suggesting the pattern was well-established prior to European contact.

Summary Comment

It has been a pleasure to have had the opportunity to provide a critique of the chapters in this synthesis of 12,000 years of the archaeology of southern Ontario's Native peoples. Particularly exciting is the fact that as archaeological knowledge expands, so do the opportunities to actually begin to understand how past societies evolved. The nature of both the archaeological and historic resources have provided scholars in southern Ontario with exceptional opportunities to gain insights into the processes involved in developing societies; insights which are testable with archaeological evidence and, in particular, by settlement pattern studies. While the leap from pottery types to inferences concerning clan lineages and phratries may seem exponential, it is actually all part and parcel of the same process – a process of progressively refining the interlocked mass of data, inferences, and assumptions that are the life blood of archaeology. With few qualifications, the contributors to the preceding chapters have succeeded admirably in carrying this ongoing process forward and, in doing so, have opened new vistas for future research. In itself, the massive bibliography represents an essential research tool.

Initially, I had intended to only consider the very broad issues raised by each chapter, but finally decided to also address detail for the simple reason that archaeological detail can be highly "loaded" in terms of its interpretative role. A Lamoka projectile point can subsume the presence and/or contact with a specific cultural construct in a specific time period. The presence of eel and other faunal remains on sites have particular seasonal and nutritional implications. The significance of individual qualitative "index fossils" must always be balanced against both quantitative and contextual factors. However, as was noted at the beginning of this chapter, the preceding comments should be treated as an addendum of alternative views and emphases to those presented in specific chapters. While I must admit to certain feelings of guilt for having played the role of critic without the various authors having an opportunity to respond, I am sure that future opportunities for argument and discussion abound. My comments, while never totally divorced from personal interests and predilections, were intended to be not only constructive but also testable by archaeological means. Given the frequently equivocal nature of archaeological evidence there will always be a healthy degree of controversy.

In sum, this volume is an extremely valuable contribution to our knowledge of the first people of southern Ontario, and the editors should be commended for bringing this volume to fruition.

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